# SB 8-75-S5

# DEPARTMENT OF THE ARMY SUPPLY BULLETIN

# Army Medical Department Supply Information

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Effective until rescinded or superseded



**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

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**NOTICE**

This Supply Bulletin is devoted entirely to the
U.S. Army Medical Materiel Agency, Materiel Acquisition Information

# CHAPTER 1. GENERAL INFORMATION

## 1-1. INTRODUCTION

The U.S. Army Medical Materiel Agency (USAMMA) is responsible for acquisition and logistics management of new and replacement medical equipment and supplies for the Table of Organization and Equipment (TOE) medical units and equipment over $100,000 for Tables of Distribution and Allowances (TDA) medical facilities. The U.S. Army Medical Command (USAMEDCOM) has tasked the USAMMA, Materiel Acquisition Directorate (MMO-A), Fort Detrick, Maryland, with the following areas of responsibility:

a. The Program Management and Acquisition logistics support/sustainment for lifecycle management of commercial and non-developmental medical materiel and unit assemblages (UAs), including:

- Source Selection
- Maintenance Planning
- Training & Training Support
- Supply Support
- Technical Data (e.g., Electronic Literature, Manuals)
- Support Equipment
- Packaging, Handling, Storage & Transportation
- Computer Resources Support
- Design Interface
- Standardization
- Basis of Issue Plans and Maintenance Allocations

The Materiel Acquisition Directorate also manages administration of data for UAs (components and logistics management data).

b. The management of Medical Care Support Equipment (MEDCASE) and Super Capital Expense Equipment Program (SuperCEEP).

c. The Army Medical Department (AMEDD) Class VIII Secondary Inventory Control Activity (SICA) and Tri-Service focal point for all aspects of medical (and some non-medical) cataloging of supplies and equipment.

d. The Technology Assessment and Requirements Analysis (TARA).

(1) The TARA is the responsibility of the Technology Planning Division (MMO-AT) and is a management tool that provides an unbiased review of the clinical requirements and operations for medical treatment facilities (MTFs). The goal of the TARA team is to provide decision makers at the USAMEDCOM with the management information needed to make informed decisions on the clinical and technological resources required to accomplish business plan missions and to develop acquisition strategies that ensure optimal clinical outcomes. In support of this mission, the MMO-AT supports the AMEDD in market and technology surveillance, equipment analysis, acquisition support, and program management.

(2) The TARA team provides the MTF Commander with a “snapshot” of the facility’s diagnostic imaging and laboratory capability during an out-brief at the conclusion of the site visit. This is followed by a written report approximately 60 days

after the completion of the site visit. The information obtained from the TARA visit can assist the Commander in managing his equipment and personnel, as well as improve and streamline his operation. In addition, requirements for new equipment are centrally generated based on the TARA.

(3) In an environment of reduced fiscal resources, it is imperative that sound business practices are applied to capital investment equipment programs. The decision makers at the USAMEDCOM, Regional Medical Commands (RMC), and individual TDA MTFs must have a viable means of acquiring the management information needed to effectively balance limited resources with clinical requirements.

(4) The TARA program presently focuses on diagnostic imaging, radiotherapy (medical centers), and clinical laboratory systems. As the radiology model for the TARA program evolved, the USAMMA was tasked to expand the TARA to include other clinical areas and programs. First, in addition to assessment of diagnostic imaging equipment, the USAMMA developed a laboratory module to assist management at Army MTFs with consolidating testing equipment and promoting efficient work areas. In addition, the TARA is expanding to other patient care areas such as patient monitoring, clinical information systems, lasers, and other equipment valued over $100,000.

## 1-2. MATERIEL ACQUISITION DIRECTORATE ALIGNMENT

a. Within the Materiel Acquisition Directorate, three clinical commodity divisions exist. Multidisciplinary teams within each division are dedicated to the lifecycle management of medical supplies, equipment, and UAs assigned to that division. Each team consists of at least one clinician, an integrated logistics manager, a logistics engineer, a biomedical engineer, a medical maintainer, a logistics management specialist, and a standardizer. The full complement of clinicians across the divisions includes an active duty laboratory officer, active duty pharmacist, active duty operating room nurse, two civilian nurses, and one civilian physicians' assistant. The three divisions coordinate actions and reviews with personnel in other Army and DoD agencies. They translate concepts and comments from doctrine and after action reports (AARs) into practical applications, enhancing the capability to save lives. The clinicians are also available to provide direct consultation with Modified Table of Organization and Equipment (MTOE) units both in the continental United States (CONUS) and outside the continental United States (OCONUS).

(1) The Ancillary Care Division (MMO-AA) is responsible for some of the most technical and specialized medical assemblages on the battlefield. They are responsible for all dental, ophthalmology/optometry, oxygen, preventive medicine, and diagnostic imaging, to include ultrasound and computed tomography products and UAs. This division manages 62 major end items and 33 medical UAs. The division also manages the UA equipment support book program.

(2) The Medical Scientific Division (MMO-AL) manages all veterinary; laboratory; chemical, biological, radiological, and nuclear (CBRN) equipment and UAs, to include the Joint Biological Agent Identification System (JBAIDS). This division is also responsible for the non-medical items; test, measurement, and diagnostic equipment (TMDE); tool kits; and the water distribution and waste water management system. Over 125 major end items and 99 assemblages are managed from within this division.

(3) The Acute Care Division (MMO-AC) manages the bulk of assemblages dealing with the acute care of the soldier. This includes equipment and UAs ranging from the sick call and ambulance sets to the forward surgical team. It also includes the core of the combat support hospital: the EMT, pharmacy, surgery, intensive care unit, and wards and clinics. This Division manages 76 end items and 62 UAs.

b. The Technology Planning Division (MMO-AT) manages the MEDCASE and SuperCEEP programs for the AMEDD. This Division also houses the TARA team. This team performs assessment visits to TDA medical treatment facilities in an effort to assess their workload requirements, operations analysis, and equipment assessment for obsolescence/upgrade/state of repair.

c. The Support Division (MMO-AS) provides acquisition support functions in support of the entire Materiel Acquisition Directorate for our customers. They develop and finalize the UAs/bills of material (BOMs);manage the directorate property book; provide technical writing/editorial support; develop interactive electronic technical manuals (IETMs); manage the directorate information on the USAMMA website; manage familiarization training; review, analyze, and modify the manpower requirements criteria (MARC) program, and maintain data for equipment readiness and reporting. They perform the SICA function for Class VIII medical items of supply by assigning and maintaining medical NSNs for all Services.

d. The Director and MAD Coordinator (MMO-A) manage the FL8D Other Procurement, Army (OPA) funds, provide support to the training base, and ensure quality assurance of all UAs and equipment data.

## 1-3. PURPOSE AND APPLICABILITY

a. This *SB 8-75-S5* issue outlines the policies and procedures that are used by the USAMMA MMO-A to include the TARA, MEDCASE and SuperCEEP, TOE management of medical field equipment and supplies, and UA management. In addition, information concerning technologies that support digital environments required for teleradiology programs is provided.

b. Programs identified in this publication, e.g., the Digital Imaging Network-Picture Archiving and Communication System (DIN-PACS), are not solely the responsibility of the USAMMA MMO-A; however, as technology program administrators, facilities are encouraged to contact the MMO-A for guidance on these issues. Point of contact (POC) is the USAMMA, ATTN: MCMR-MMO-AT, Fort Detrick MD 21702-5001; telephone DSN 343-8198, commercial 301-619-8198.

## 1-4. OVERVIEW OF *SB 8-75-S5*

a. Chapter 2 discusses the MEDCASE and SuperCEEP programs. The MEDCASE and SuperCEEP programs are centrally funded programs that provide the capital investment equipment required to support Army health care activities at TDA Army MTFs throughout the world. Equipment requirements originate at the activity level and are reviewed and approved at levels that depend on dollar value. The web MEDCASE requirements and execution (WebMRE) database is used to front-load MEDCASE and SuperCEEP requirements for routine replacement of diagnostic imaging systems and acquisition of newly recommended equipment, based on TARA reviews.

b. Chapter 3 provides details on the TARA program, its history, and future directions. The TARA team needs to understand the vision of the Commander to effectively evaluate each facility. Information on the facility is requested in advance or during the TARA site visit. Without the vision of the facility Commander and accurate data on workload, patient trends, and equipment, the TARA team can only provide its best estimates on future needs of each facility.

c. Chapter 4 discusses managing technology in the military laboratory. Management of laboratories in departments of pathology requires a review of the cost efficiency of procuring new equipment versus equipment reagent rental and cost-per-test contracting. As equipment reaches its life expectancy and before purchasing new equipment, the possible benefits of cost-per-test contracting and reagent rental contracts are evaluated.

d. Chapter 5 discusses the goals of military radiology. The goal of military radiology is to be the prime provider of high-quality radiology services to all Department of Defense (DOD) beneficiaries of health care. The Military Radiology *Functional Economic Analysis* (FEA) discusses the vision of the military radiology community.

e. Chapter 6 provides information on the Digital Imaging Communication in Medicine (DICOM) standard. The DICOM standard allows radiology devices to interface with each other, even if they are miles apart and manufactured by different vendors. All new purchases or upgrades for Army MTFs support the current DICOM standard.

f. Chapter 7 discusses Picture Archiving and Communication System (PACS). PACS implementation is largely the responsibility of the Army PACS Program Management Office (APPMO).

g. Chapter 8 provides information on the supportability analyses conducted by the MMO-A to describe the strategic roadmap of logistics supportability functions and the planning necessary to influence the system's design from concept to disposal. The support strategy summarizes the results of the logistics analysis, planning, and acquisition. All elements of logistics and related disciplines are included in the support strategy.

h. Chapter 9 lists the Equipment Items Support and Consumables Handbooks developed by the Materiel Acquisition Directorate. These handbooks can be used to quickly identify shortage items at the time of issue, during unit inventory, and to re-supply the consumables. In addition, these handbooks can be used as a guide for resupply.

i. Chapter 10 discusses information on the UAs. Also included is information on obtaining supply catalogs (SCs) or supply bulletins (SBs), a list of the major medical assemblages, information on compact disc (CD), on-line capability to request national stock numbers (NSNs), how to recommend improvements and report errors in the UAs, and information on UA listings for consumable/support items.

j. Chapter 11 discusses information and products of the Materiel Acquisition Directorate, Acquisition Support Division (MMO-AS). This chapter includes applicable SICA information on acquisition advice code (AAC) “W” and AAC “J” relationships, NSNs for controlled substances, FED LOG on CD, the Medical Services Information Logistics System (MEDSILS), and the Universal Data Repository (UDR).

k. A Glossary of abbreviations is also included in this Supply Bulletin.

# CHAPTER 2. MEDICAL CARE AND SUPPORT EQUIPMENT (MEDCASE) PROGRAM / SUPER CAPITAL EXPENSE EQUIPMENT PROGRAM (SUPERCEEP)

## 2-1. INTRODUCTION

The MEDCASE/SuperCEEP Programs centrally fund the capital investment equipment required to support Army healthcare activities at fixed MTFs throughout the world. Equipment requirements originate at the activity level and are centrally generated by the TARA team. Requirements generated at the MTF are reviewed and approved at the activity, the RMC, the USAMMA, and the AMEDD consultants to The Surgeon General (TSG). Approved and disapproved requirements are recorded in the AMEDD central database (the [WebMRE] system) maintained by the USAMMA. The USAMMA receives MEDCASE/ SuperCEEP funds from the USAMEDCOM that are managed and controlled in the WebMRE system for participating RMCs and Major Subordinate Commands (MSCs). To review the entire MEDCASE/SuperCEEP program, refer to the *SB-8-75-MEDCASE* which is on the USAMMA website at: **http://www.usamma.army.mil/**. From the menu, select "Reference," then "Supply Bulletin *SB 8-75 Series*."

## 2-2. THE MEDCASE/SUPERCEEP PROCESS

a. All MEDCASE/SuperCEEP diagnostic imaging and radiotherapy equipment requirements $100,000 and greater, regardless of Budget Line Item Code (BLIC), are centrally managed by the USAMEDCOM. The USAMMA Technology Planning Division (MMO-AT), is responsible for the coordination of this program. This ensures consistency of application and compliance with AMEDD strategic plans.

b. At the direction of the USAMEDCOM, the MMO-AT has developed and implemented a process to centrally generate MEDCASE/SuperCEEP requirements identified during a TARA visit. Using the data collected from site visits and MEDCASE/SuperCEEP program requirements (see Figures 2-1 through 2-3 for MEDCASE/SuperCEEP process), the TARA team has constructed a database to assist in providing guidance for approving future MEDCASE/ SuperCEEP requests. Information from the TARA database is used to front-load MEDCASE/SuperCEEP requirements in the WebMRE for routine replacement of diagnostic imaging systems. This reduces clinician and logistician administrative workload and eliminates duplication of effort. The USAMMA generates the requirements documentation for the MTF, based on TARA recommendations. As a result, the MTF does not have to generate a DA Form 5027-R (MEDCASE Program Requirement [MPR]) or have to generate a DA Form 5028-R (MEDCASE Support and Transmittal Form).

(1) These requirements have an asset control number (ACN) with a 900-series sequence number assigned by the USAMMA. The WebMRE system is preloaded with these requirements and initially has an approved code of 5M with Project Code of TAR (TAR refers to any requirement generated by the TARA team).

(2) The USAMMA MMO-AT prepares the MEDCASE/SuperCEEP transmittal outlining those requirements identified during the last TARA visit, and sends the transmittal through the MTF and the RMC for staffing and concurrence purposes. At this time, the approval code is changed to 4T. The RMCs and MTFs should follow their own internal review procedures (Chiefs of Medical Maintenance, Facilities, Logistics, and Radiology; the Deputy Chief for Administration [DCA]; and Commander) in determining whether or not to concur

with the requirement. After the MTF and the RMC make the decision to concur or non-concur, the RMC MEDCASE/SuperCEEP manager must return the documentation showing concurrence or non-concurrence to the USAMMA. The activity MEDCASE/SuperCEEP manager establishes the requirement in the Defense Medical Logistics Support System (DMLSS) when the TARA transmittal is received. On receipt of concurrence from RMC and MTF, the USAMMA MMO-AT converts the requirement to approved 1A status in the WebMRE system.

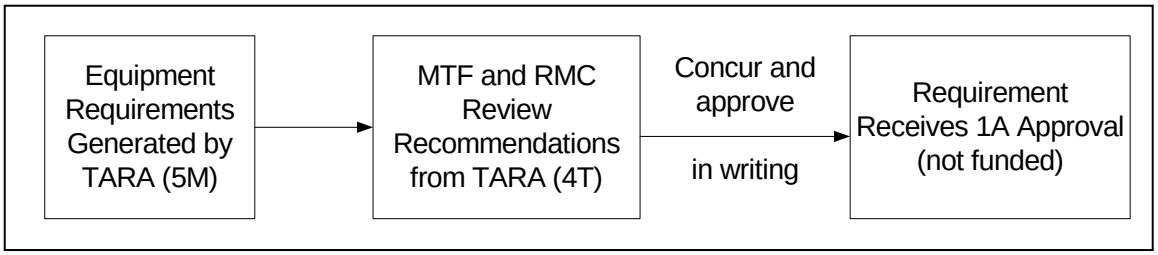


Figure 2-1. Centrally generated MEDCASE/SuperCEEP Program requirements and process (Continued in Figure 2-3).

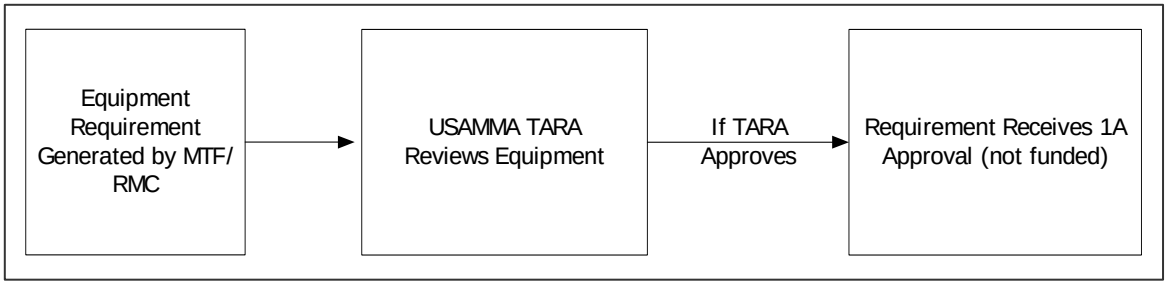


Figure 2-2. MTF generated MEDCASE/SuperCEEP Program requirements and process (Continued in Figure 2-3).

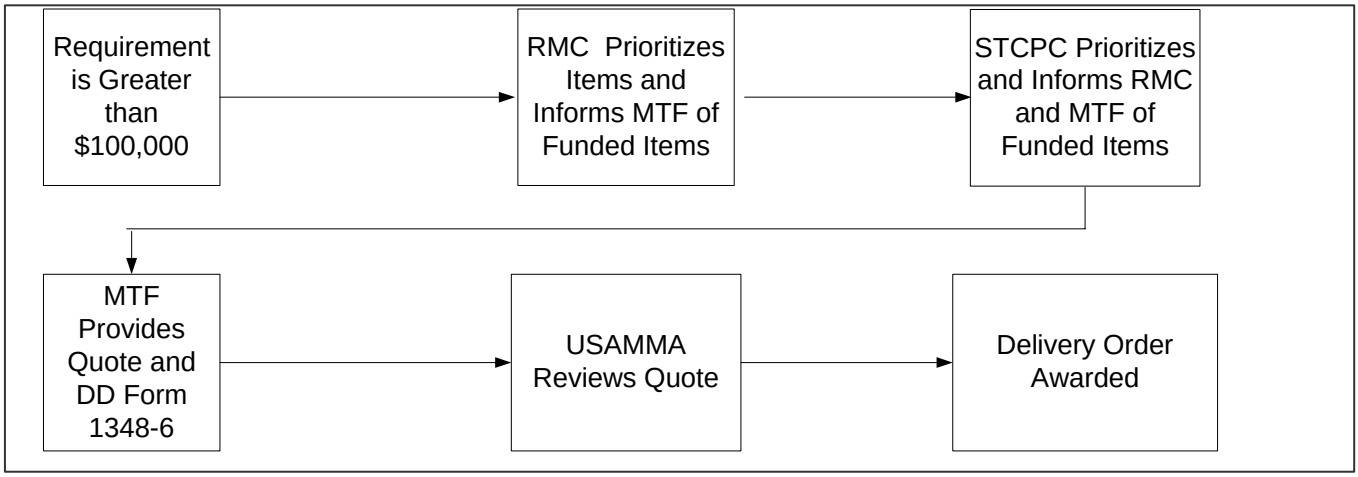


Figure 2-3. Flowchart of the funding process for 1A-approved requirements.

(3) The 1A requirement in the WebMRE database validates the requirement but does not signify that the requirement is funded. These requirements are used to support

the AMEDD's equipment funding budget in the coming fiscal years (FYs). Neither centrally-generated requirements nor MTF-generated requirements receive priority for funding; both are reviewed equally by USAMEDCOM.

(4) BLIC UR funding is allocated from USAMEDCOM at two levels:

(a) MEDCASE requirements (greater than $250,000)
(b) SuperCEEP requirements (those between $100,000 and $249,999).

The USAMEDCOM is responsible for funding all items.

(5) Once the equipment is funded, the MTF must submit to the USAMMA MMO-AT for final approval DD Form 1348-6 (DOD Single Line Item Requisition System Document), a valid vendor quote for the system of choice (determined by the site unless a central group buy is directed by USAMEDCOM), and site-prep worksheet with statement of work (SOW) if applicable. Once the USAMMA concurs with the quoted system, MMO-AT sends the requisition package to the Defense Supply Center Philadelphia (DSCP) or U.S. Army Medical Research Acquisition Activity (USAMRAA) for purchase.

## 2-3. MTF-GENERATED MEDCASE PROGRAM REQUIREMENT

a. MTFs may continue to generate and submit requirements at their discretion. In addition, MPRs submitted for changing mission requirements or expanded business opportunities still require the facility to submit a MEDCASE/SuperCeep requirement. The process for MTF-generated MPRs has not changed; see *SB 8-75-MEDCASE*.

b. The justification must include, at a minimum, the following information:

(1) What is the item requested to be used for?
(2) Why is the item needed?
(3) How will the item be used with other equipment?
(4) What are the advantages of the requested item compared with equipment currently in use or available?
(5) Why are these advantages needed?
(6) Have specific details been presented regarding cost-benefits, personnel savings or productivity, the enhancement or curtailment of services, frequency or duration of breakdown, or other specific factors that may be relevant?
(7) What will be the impact upon mission accomplishment if the requested item is not acquired?
(8) Is the anticipated workload provided?
(9) Has consideration been given to the use of available excess assets to satisfy this requirement?

## 2-4. USAMMA MEDCASE/SUPERCEEP MANAGER POC

a. POC is as follows:

USAMMA
ATTN: MCMR-MMO-AT
1423 Sultan Drive, Suite 100
Fort Detrick MD 21702-5001

Telephone for both CONUS and OCONUS activities is DSN 343-6984, commercial 301-619-6984. Telefax number is DSN 343-4480, commercial 301-619-4480.

b. A checklist for the MTF MEDCASE/SuperCEEP manager is shown in Figure 2-4.

| Task | Task Completed |
|---|---|
| 1. Wait for Central MEDCASE/SuperCEEP Requirements transmittal from the USAMMA for TARA identified requirements | |
| 2. Route through MTF for signatures | |
| a. Chief, Department of Radiology | |
| b. Chief, Medical Maintenance | |
| c. Chief, Facilities | |
| d. Chief, Logistics | |
| e. Others required by MTF | |
| f. DCA (if required) | |
| g. Commander | |
| 3. Send to RMC for concurrence | |
| 4. RMC should concur/non-concur and forward copy to USAMMA and MTF | |
| 5. Await funding | |
| 6. Once funded, send quote and DD Form 1348-6 to the USAMMA for diagnostic imaging equipment | |
| 7. Await system | |

Figure 2-4. Checklist for MEDCASE/SuperCEEP Manager

# CHAPTER 3. TECHNOLOGY ASSESSMENT AND REQUIREMENTS ANALYSIS (TARA) PROGRAM

## 3-1. INTRODUCTION

a. Background. The TARA program originated with a 1992 tasking by the Corporate Information Management group (later designated the Medical Functional Information Management group) to evaluate commercial capabilities for technology assessment and capital equipment asset management. This tasking led to the award of a pilot contract in January 1993 to conduct an initial evaluation of Ireland Army Community Hospital, Fort Knox, KY, in the areas of diagnostic imaging and laboratory. The product fell short of the program goals, and the decision was made, with the concurrence of the Office of The Surgeon General (OTSG) radiology consultant, to develop an in-house program.

b. TARA Development. During the remainder of 1993, the USAMMA MMT-S (now MMO-AT) queried the technology assessment and asset management capabilities of several hospital systems and developed a composite program for AMEDD use (later designated the TARA program) that was first used at the Walter Reed Army Medical Center in April 1994. The Strategic Technology and Clinical Policies Council (STCPC) formally adopted the TARA program in January 1995, directing full integration of clinical consultants and requiring a TARA visit to every AMEDD medical activity and medical center on a 3-year basis. After the initial round of site visits, the frequency was changed to every 4 years for all MTFs, except medical centers remained on a 3-year review cycle.

c. Process Improvements and Cost Avoidance. The radiology model of the TARA program has resulted in process improvements for requirements generation and delivery of services, expedited modernization of diagnostic imaging systems, leveraged technology and industry by standardization and group buy initiatives and generated a cost avoidance of about $117.2 million for the AMEDD since the first visit in April 1994. To continue the success of the TARA program, value-added processes continue to be developed and refined.

d. Laboratory TARA. At the request of the USAMEDCOM, a TARA program for the laboratory area of MTFs was developed at the beginning of FY 1998. Benefits similar to those achieved with the radiology model also occurred for laboratory, although on a smaller scale. The TARA team has determined that the laboratory model was most effective in equipment evaluations when applied to medical centers and community hospitals with a high volume of laboratory work or a unique laboratory function. However, Laboratory Interoperability (a laboratory data transfer system), ensuring third-party reimbursement (particularly when considering that the Army hospital laboratory handles hundreds of thousands of tests per year), and issues of data management and accuracy (as well as equipment issues) continue to be addressed regardless of the scope of laboratory operations. The TARA team recommends that medical centers consolidate, when practicable, as much laboratory testing as possible on high-volume analyzers and testing equipment. This consolidation may require sending testing that does not require a rapid turnaround from MTFs to the Medical Center (MEDCEN) within that RMC. The TARA team also encourages MEDCENs to continue to implement laboratory automation practices. (Laboratory automation is discussed in Chapter 4.)

## 3-2. THE TARA PROCESS

a. The on-site evaluation of current technology and management operations within the radiology and clinical laboratory departments is performed by the OTSG radiology and laboratory consultants, or their representatives, and personnel of the USAMMA MMO-AT to gather information and validate previously submitted data. The purpose of the site visit is to interview departmental staff, observe scheduling and patient-flow patterns, and evaluate quality of service and the condition and utilization of existing equipment. The TARA provides an unbiased review of the clinical processes, requirements, operations, and equipment for diagnostic imaging, radiotherapy, and clinical laboratory systems at the facility. The goal is to provide senior decision makers with the management information needed to make informed decisions on the clinical and technological resources required to accomplish business plan missions and to develop acquisition strategies that ensure optimal clinical outcomes. The mission is to ensure that medical technology within the AMEDD assessed under the TARA process remains on the established technology curve. Although state-of-the-art technology is expensive, benefits generally exceed the acquisition cost over the long run.

b. The TARA site visit consists of four major components.

(1) Assessment of clinical operations. The assessment is a clinical functional review by OTSG specialty consultants or senior clinicians. The functional review generally focuses on staffing, customer service, quality and risk management, patient management, appropriate functional task performance, and integration with other care areas. This review incorporates clinical input from the assessed facility with respect to workforce design, functional success, and mission, and compares the functional operation to accepted practice models. As a full AMEDD functional review, this evaluation also addresses leader development, training, and other military-relevant management issues.

(2) Assessment of requirements. Commercial, for-profit equipment utilization factors tempered by contingency issues unique to military hospitals are applied to the facility's workload to determine how the MTF compares with commercial counterparts. This comparison does not imply that the MTF should be held to commercial standards. However, these utilization factors provide the TARA team with benchmarks to begin the evaluation process.

(3) Assessment of operations. This includes an evaluation of procedural mix, staffing, work schedule, patient flow and throughput, and quality assurance and risk management to the extent that these factors apply to the acceptability and appropriate use of existing equipment.

(4) Assessment of equipment. This evaluation assesses whether the facility's existing equipment uses abandoned or obsolete technology and whether the equipment meets standards for acceptability. The assessment includes a market survey of current technology, a comprehensive evaluation of existing equipment, an evaluation of trends and developments that will affect diagnostic imaging, patient monitoring, and laboratory requirements at the MTF, and contract information where pertinent. The evaluation may include telecommunications equipment to determine if the existing infrastructure will support new teleradiology initiatives.

c. A TARA provides a snapshot of the facility's diagnostic imaging and clinical laboratory processes for the period during which the site survey was conducted. However, the TARA is not intended as a substitute for the facility's own routine evaluation of their operations. Because changes in a facility’s strategic vision could alter diagnostic imaging or laboratory requirements, the requirements for the MTF should be periodically re-evaluated, especially in the event of a major change in mission.

d. The following information related to diagnostic imaging equipment will be requested and required prior to the site visit:

(1) Composite Healthcare System (CHCS) data for the number and type of procedures performed annually, workload data for the last 3 to 4 years showing trends, patient numbers for each modality, and data for referrals outside the MTF, ad-hoc reports from CHCS showing daily workload broken down by the hour for diagnostic radiology in order to identify peak workload for accurate assessment of needs;

(2) DMLSS maintenance histories for diagnostic imaging systems in the radiology department. This should include, if applicable, imaging systems elsewhere in the hospital such as the urology, obstetrics/gynecology sections, and orthopedics;

(3) Business plan, if available, addressing services currently provided and services to be initiated or discontinued, including supplemental care expenditures for radiology;

(4) Patient demographics for catchment area;

(5) Blueprint or diagram of radiology department;

(6) Staffing information including authorized positions and actual staff numbers; and

(7) Plans, diagrams, or descriptions of existing telecommunications and networking infrastructure.

e. The following information related to laboratory equipment will be requested and required prior to the site visit at medical centers:

(1) Current property listing for all laboratory equipment and maintenance histories for all major laboratory equipment in the facility and any outlying clinics;

(2) Organizational chart;

(3) Blueprint or diagram of laboratory department;

(4) TDA for pathology, including actual staffing numbers and names by department;

(5) Contract information with cost data for major equipment, including whether the equipment is cost per test, leased, or purchased;

(6) Cost data for major equipment for supplies and consumables by month and year;

(7) Copies of workload detail statistics reports on a CD or as e-mail attachment, with data broken down by month for the past 12 months;

(8) A copy of the facility's laboratory manual; and

(9) Medical Expense Performance Reporting System (MEPRS) reports for the past entire fiscal year. The reports should include the computational summary indicating direct expenses, support costs, and ancillary costs, for a minimum of the last two quarters and the step-down assignment statistics reports.

f. The following information related to network management may be requested prior to the site visit:

(1) Network topology, including information on voice, data, major vendors for local area network (LAN) hardware, and upgrade plans and schedules, if any.

(2) Bandwidth to desktop and bandwidth of the backplane and percentage of bandwidth in use during typical network loads.

(3) The network protocol, i.e. asynchronous transfer mode (ATM) or ethernet.

(4) The clinics on base or in remote locations, if any, the network supports and connectivity to the clinics.

(5) What major routers are in place and what networks do the routers interface?

g. Information on the wide area network (WAN), including what data is being carried on it.

h. The TARA will request that the facility dedicate a classroom or conference room for use during the visit for meeting and storing equipment and as a base of operations. In addition, the team would need internet connectivity and print capability (computer and printer); and if required by local regulations, visitor badges should be provided on arrival or during the in-brief.

## 3-3. TEAM APPROACH FOR TARA

a. Currently, the TARA team consists of radiology and laboratory consultants from OTSG (expertise from consultants in other specialties, i.e., radiation oncology, nuclear medicine, etc. is also available) and a group from the USAMMA. The USAMMA MMO-AT group contains specialists in biomedical and clinical engineering, medical physics, laboratory, and maintenance.

b. The team approach is necessary given the large amount of information that must be collected, organized, and analyzed. The preliminary analysis is presented to the commander during the out-brief. A formal report follows within 60 days.

c. The maintenance portion of the TARA is necessary to evaluate the MTF's equipment. Relatively new equipment with extensive unscheduled maintenance must be considered for replacement along with older technology. Outsourcing of maintenance contracts and the impact that has on the availability of the device must be assessed. The goal is to maximize the availability of diagnostic equipment, so that it may be used by the clinician. Assessment of the maintenance support of that equipment is extremely critical to achieving that goal.

d. The biomedical engineering component applies to the radiology and laboratory areas. They provide expertise in the area of equipment evaluation, but they are also responsible for the development of acquisition strategies for new and emerging medical systems within their sub-specialty.

e. The clinical component applies to both the radiology and laboratory areas. This assessment is performed by the OTSG Clinical Consultants or their representatives. They provide clinical guidance with respect to clinical acceptability of equipment and review clinical procedures within the departments. They work closely with the biomedical engineers in evaluating new and emerging medical systems. In addition, the clinical consultant assesses the staffing requirements within each facility and provides recommendations with respect to current staffing levels for both radiologists and support personnel (i.e., technologists, administrative assistants, etc.).

## 3-4. TARA SCHEDULE

The TARA schedule for FY 2007 through FY 2008 is shown in Table 3-1. If the Command at an MTF feels that TARA assistance is needed between scheduled site visits, assistance visits can be scheduled and coordinated at the Command's convenience. The TARA team keeps the up-to-date schedule at

**http://www.usamma.army.mil/tara/tara_schedule.cfm**

**Table 3-1. TARA SITE VISIT SCHEDULE, FY 2007 THROUGH FY 2008**

| FY 2007 | | |
|---|---|---|
| **Site** | **RMC** | **Scheduled Date** |
| Knox | North Atlantic | Apr-07 |
| WBAMC | Great Plains | May-07 |
| Irwin | Western | Jul-07 |
| CRDAMC | Great Plains | Aug-07 |

| FY 2008 | | |
|---|---|---|
| **Site** | **RMC** | **Scheduled Date** |
| Lee/Eustis | North Atlantic | Nov-07 |
| MAMC | Western | Jan-08 |
| NCR | North Atlantic | Mar-08 |
| West Point | North Atlantic | Jun-08 |
| Drum | North Atlantic | Jun-08 |
| Carson | Great Plains | Jul-08 |
| DDEAMC | Southeast | Aug-08 |

## 3-5. CLINICAL APPROACH AND BUSINESS PROCESS RE-ENGINEERING

a. Radiologists who conduct the clinical component of the TARA site visit use the FEA (Business Process Reengineering *[BPR] 1255047-035*, September 4, 1996) as a guide for comparing and gathering information. The FEA defines the ideal radiology support necessary to improve the cost, quality, access, and readiness of military health care services. The recommended functional improvements enabled by digital radiology will strengthen the MHS push toward attaining designation.

b. The Joint Healthcare Management Engineering Team (JHMET) sponsored by the Air Force Management Engineering Agency released in August 1994 the *Joint Healthcare Manpower Standards Development Study* recommends approximately 6 staff personnel, including technologists, should be available to support each radiologist within the radiology department. For facilities without a radiologist or significant reception, clerical, or file room support, it is estimated that 1 technologist is required for every 1,500 studies. According to the radiology data collection survey and the DMIS summary report, military radiology departments had approximately 5.3 to 5.7 technologists and support staff for every radiologist in 1995. Most sites are close to established JHMET standard. The radiology workgroup predicts that changes in radiological technology will reduce the required support personnel.

## 3-6. REQUIREMENTS FOR OPERATIONS AND EQUIPMENT

a. The TARA team uses commercial equipment utilization factors, tempered by contingency issues unique to military hospitals. These utilization factors are applied to the facility's workload to determine how the hospital or clinic compares with commercial counterparts. This comparison does not imply that the hospital or clinic should be held to commercial standards. However, these utilization factors provide the TARA team benchmarks with which to begin the evaluation process. As shown in Tables 3-2 and 3-3, the TARA team used the following method to determine the ideal utilization (*U*) factors for each section of the radiology department:

$U$ = current MTF studies/year ÷ (expected MTF hours/year × studies/hour).

The utilization factor represents the number of systems needed to handle the patient workload at the facility. These factors are only used as guidelines and can

change from facility to facility, based on types of studies, mission, and the catchment area.

b. The productive use for diagnostic imaging equipment is based on the typical amount of time expected to perform a study, exam, or procedure. For example, an ultrasound study, on average, takes approximately 45 minutes, which equates to 1.33 studies per hour, as shown in Table 3-3. The productive use for clinical laboratory test equipment is based on the annual test volume divided by manufacturer's annual throughput. These numbers are then tempered according to hours of operation and test menu configuration. Calculations are instrument specific and can provide for a number of solutions depending on which make and models are used. Equipment focus is on what is currently in use, what is predominant within the region, and any equipment identified by the laboratory manager.

c. Once the number of hours per year and the studies per hour are determined, the 2 are multiplied together to conclude the ideal studies per year. For example, with ultrasound there are 2,000 available hours per year with 1.33 studies per hour, which equates to 2,660 ideal studies per year, as shown in Table 3-3.

d. Based on technologists' interviews and CHCS reports, the number of studies per year for the facility is determined and validated. This number is then divided by the ideal number of studies per year to determine the utilization requirement or the proposed number of systems that the department should have. For example, with ultrasound, a hospital seeing 4,500 patients per year will have a utilization of 1.7 or 2 systems.

**Table 3-2. DIAGNOSTIC IMAGING HOURS AVAILABLE**

| Modality | Expected hours used per day | Expected days used per week | Expected weeks used per year | Expected MTF hours used per year |
|---|---|---|---|---|
| Radiography (Peak 4 hours)* | 4 | 5 | 50 | 1,000 |
| Radiography (all shifts)** | 24 | 6 | 50 | 7,200 |
| Fluoroscopy | 5 | 5 | 50 | 1,250 |
| Mammography | 8 | 5 | 50 | 2,000 |
| Ultrasound | 8 | 5 | 50 | 2,000 |
| Nuclear Medicine*** | | | | |
| Computed Tomography | 16 | 6 | 52 | 4,992 |
| Magnetic Resonance Imaging | 16 | 6 | 52 | 4,992 |
| Clinic | 8 | 5 | 50 | 2,000 |
| Radiation Therapy | 7 | 5 | 50 | 1,750 |
| R/F Simulator | 7 | 5 | 50 | 1,750 |

*Workload for period of peak utilization (usually 0730 to 1130).

**Smaller facilities may essentially work only one shift with after-hours support to emergency room or urgent care being a small percentage of workload.

***Gamma cameras for nuclear medicine typically see 5 patients per day and are used 230 days per year for an annual total of 1,150 patients/camera/year.

**Table 3-3. DETERMINING EQUIPMENT UTILIZATION**

| Technology | Expected MTF Hours/Year | Studies/ Hour | Ideal Studies/ Year | Current MTF Studies/ Year | Utilization |
|---|---|---|---|---|---|
| | | | | | |
| Radiography (busiest shift)* | 1,000 | 4 | 4,000 | A | A ÷ 4,000 |
| Radiography (all shifts)* | 7,200 | 4 | NA | NA | NA |
| Fluoroscopy | 1,250 | 1.33 | 1,663 | B | B ÷ 1,663 |
| Mammography | 2,000 | 2 | 4,000 | C | C ÷ 4,000 |
| Ultrasound** | 2,000 | 1.33 | 2,660 | D | D ÷ 2,660 |
| Nuclear Medicine | 1,840 | 1.6 | 1,150 | E | E ÷ 1,150 |
| CT*** | 4,800 | 2 | 9,984 | F | F ÷ 9,984 |
| MRI*** | 4,800 | 1 | 4,992 | G | G ÷ 4,992 |
| Clinic | 2,000 | 5 | 10,000 | H | H ÷ 10,000 |
| Linear Accelerator**** | 1,750 | 4 | 6,500 | I | I ÷ 6,500 |
| R/F Therapy Simulator | 1,750 | 1 | 1,750 | J | J ÷ 1,750 |

*Equipment utilization for general radiology is calculated to meet workload of busiest half of busiest shift, usually the shift between 0730 and 1130.

**Calculations are based on actual management engineering time studies; each procedure has been assigned room productivity times. The exact time was based on industry information tempered by unique aspects of the DOD's medical operations and the operation of the local facility. The following example shows how this method was used to derive the equipment utilization factor for ultrasound.

| Equipment | Ultrasound |
|---|---|
| Hours available/year | 8 hours/day × 5 days/week × 50 weeks = 2,000 hours/year |
| MTF Productive time | 1.33 study/hour (45 minutes/study for MEDDAC/MEDCEN) |
| Ideal studies/year | 1.33 study/hour × 2,000 hours/year = 2,660 ideal studies/year |
| MTF studies/ year | 4,500 studies/year |
| Utilization factor | 4,500 studies/year ÷ 2,660 ideal studies/year = 1.7 systems |

***MTF hours of operations and number of studies per year for CT and MRI are based on DOD standards. However, the number of studies per hour that can be conducted on these systems is being reviewed as scanning times have become shorter. As a result of shorter scanning times, the ideal number of patients per year may increase and the equipment utilization factor may decrease.

****Linear accelerator is number of treatments, not patients (most patients require a number of treatments), and rounded down to reflect complexity of some procedures that require additional time on the machine.

## 3-7. TARA CYCLE REVIEW

a. The radiology model of the TARA program has resulted in process improvements for requirements generation for new equipment and delivery of services, expedited modernization of diagnostic imaging systems, leveraged technology and industry by standardization and group buy initiatives and generated a cost avoidance of approximately $117.2 million since 1994 (Table 3-4). In addition, the laboratory model generated a cost avoidance of approximately $2.4 million since FY 1998. The direct cost avoidance from the TARA process is based on the removal of technology that is no longer required. The benefits from corrections in scope are

gained when, after TARA review, requested technology is replaced with lower cost technology that is more appropriate for the clinical requirements and workload at the MTF.

b. During the first complete TARA cycle, about 40 Army MTFs were visited. (Since that time, the total number of facilities visited has reached about 75, including facilities of the Air Force, Navy, and Department of Veterans Affairs.)

c. Facilities are often short of clerical staff for the radiology department. This reduces the efficiency and throughput of the department because technologists spend significant time performing clerical duties (e.g., performing receptionist duties or entering patient data). Adequate clerical support will probably increase the department's overall productivity.

**Table 3-4. TARA PROGRAM COST AVOIDANCE TO DATE**

| Fiscal Year | Cost Avoidance (Radiology) | Savings (Maintenance) | Savings Standardization (Group Buys) | Cost Avoidance Laboratory |
|---|---|---|---|---|
| 1994 | $10,975,000 | $1,097,500 | | NA |
| 1995 | $14,553,250 | $1,455,325 | | NA |
| 1996 | $11,455,700 | $1,145,570 | | NA |
| 1997 | $3,289,000 | $328,900 | | NA |
| 1998 | $3,959,000 | $395,900 | | $1,677,750 |
| 1999 | $4,059,100 | $405,910 | | $688,000 |
| 2000 | $3,123,800 | $312,380 | $722,000 | $117,000 |
| 2001 | $6,285,000 | $628,500 | | NA |
| 2002 | $425,000 | $42,500 | $857,563 | NA |
| 2003 | $4,530,000 | $453,000 | $3,162,775 | NA |
| 2004 | $3,204,000 | $320,400 | | NA |
| 2005 | $8,286,000 | $828,600 | $2,050,252 | NA |
| 2006 | $16,992,000 | $1,699,200 | $7,009,344 | NA |
| 2007* | $640,000 | $64,000 | | |
| **Total** | **$91,776,850** | **$9,177,685** | **$13,801,934** | **$2,482,750** |
| * through Dec 2007 | | Total Cost Avoidance/Savings → | | **$117,239,219** |

d. With the start of TRICARE Next Generation, MTFs are responsible for funding cost of exams for patients referred to outside facilities. Consequently, the TARA team now evaluates the types of exams sent out for patient care and the cost of the exams. The TARA team provides recommendations to help bring studies back into the MTF or help justify why it is cost beneficial to send patients out of the network.

e. Previously, analog fluoroscopic systems had excessive downtime attributable to problems with the imaging chain and spot-film devices, requiring MTFs to have a backup system to accommodate their workload. The conversion to digital technology eliminates mechanical complexity and improves the reliability of the systems making backup fluoroscopy systems no longer necessary. The point here is twofold:

(1) Requirements should not be approved based solely on the fact that a facility is replacing an existing system.

(2) Workload, maintenance, and facility considerations change periodically and should always be evaluated in the approval process. In addition, staffing, facilities, and maintenance services are an integral part of any diagnostic imaging “system” and materially affect the facility’s requirement.

f. Military radiology faces challenges in providing high-quality health care for all Armed Forces personnel and other beneficiaries within a changing military medicine environment. The goal of military radiology is to achieve the readiness capability required by military commands, to maximize the value of its health care services, and to promote a coordinated, collaborative Tri-Service approach to radiology. Several constraints affect the ability of the Military Healthcare System (MHS) to successfully fulfill the requirements of this goal, and with current limitations and changes in the health care environment, military radiology must prepare for the future.

g. The conversion to digital technology enhances efficiency and improves access to services. The proliferation of digital acquisition and processing devices and, ultimately, “filmless” hospital archive and teleradiology systems such as DIN-PACS is necessary to meet the MHS objectives outlined for radiology such as reducing report turnaround times and improving image accountability. Wet-chemistry-film processing, except for mammography, should be replaced with computed radiography. Networking of ultrasound and nuclear medicine systems to modality processing systems enhances clinician and technologist productivity. Establishing this network also reduces life-cycle costs by extending the life expectancy of the systems and allowing relatively inexpensive software upgrades in lieu of expensive hardware replacement. Digital technology is now more standard of care than emerging or state of the art, and few vendors still produce analog systems.

h. The military radiology community recognizes both the need for change and the opportunities for change that exist and has undertaken the corporate information management BPR effort (results published in the *FEA, BPR 1255047-035*, September 4, 1996). Rather than focusing on a specific technological solution, the goal of this effort is to streamline radiology activities and processes. The future of military healthcare will be characterized by access to high-quality care anytime and anywhere with total integration of patient records. These requirements magnify the limitations of current radiology services.

# CHAPTER 4. MANAGING TECHNOLOGY IN THE MILITARY LABORATORY

## 4-1. INTRODUCTION

a. Healthcare initiatives have mandated that military laboratories begin to look at the way they do business to ensure the highest quality healthcare be provided in a timely manner. The USAMMA has been tasked to look at their business operations in comparison to the commercial counterparts and provide improvements. In some aspects this method has been effective, but in others there are military issues that cannot be addressed by comparing operations with the commercial sector.

b. Contracting methods have been developed in the commercial sector that can be taken advantage of by military laboratories. These new ways available for equipment and supply contracts allow the laboratories to keep up with the latest developments in technology, which was difficult to accomplish previously when facilities were purchasing equipment.

c. Issues that are not addressed include military readiness and training and the high turnover of military personnel that affects the efficiency of the laboratory. These issues have an impact on staffing and equipment configuration as they relate to workload. It is necessary to develop benchmark indicators other than the commercial benchmarks to properly look at the operations of military laboratories.

d. The TARA team determined that this process could most effectively be applied and the greatest cost avoidance realized at Army medical centers. To maximize effective use of high-volume analyzers at medical centers, the TARA team suggests that laboratory testing be consolidated in each RMC to the extent practical. This consolidation will ensure that high-volume analyzers at the medical centers operate as cost-efficiently as possible and allowing in some cases removal of underused equipment at medical activities.

## 4-2. EQUIPMENT CONTRACTING FOR THE LABORATORY

a. The TARA team suggests when replacing the major analyzers, all methods of contracting for analyzers should be considered. The technology for the major analyzers is continuously improving and a capital investment in these types of analyzers is not always prudent. These analyzers can become obsolete within a couple of years or test menus can change and the return on investment would be low. The high supply costs for these analyzers should also be considered. Once the instrument is purchased, the facility needs to continue expenditures on supplies. Some contracting methods incorporate expenditures and supplies in the rental costs.

b. There are three different methods of acquiring laboratory equipment.

(1) The traditional contracting method is purchasing equipment. This method is valid when acquiring equipment that is low in cost or has a long life expectancy, both in terms of useful life and technology obsolescence. Examples of this type of equipment in the laboratory would be microscopes and centrifuges. A number of government contracting agencies keep central contracts for this type of equipment to achieve volume discounts. The General Services Administration (GSA),

Department of Veterans Affairs National Acquisition Center, or the DSCP has contracts available. In other cases, the facility can contract on their own to purchase equipment. In the case of purchasing equipment, local procurement dollars will be used for CEEP (less than $100,000) and centrally managed procurement dollars (through the USAMEDCOM) for SuperCEEP ($100,000 to $250,000) or MEDCASE (more than $250,000) equipment.

(2) Reagent rental contracting is based on leasing the equipment for a monthly fee that can be very low with the guarantee that the MTF will buy a certain volume of reagents from the company supplying the equipment. Contracting for this method is usually done individually by each facility with the vendors. Although this avoids the high initial expenditure and considers the cost of supplies, in most cases the equipment is owned by the facility at the end of the lease. Again this does not consider new technological developments, changes in mission, obsolescence, or facility needs.

(3) Cost-per-test is similar to reagent rental in that it is based on purchases of reagents or supplies for the analyzers. The difference is that the equipment is owned by the vendor and can be upgraded or turned in at the end of each contract year. Cost-per-test contracting is based on annual workload, and vendors work with the facility to determine what equipment configuration is appropriate for their workload and mission. A number of regional cost-per-test contracts with different vendors exist that offer volume discounts. Prices vary in accordance with the volume, percent utilization of a specific vendor's equipment, type of service contract and equipment and configuration within the facility. Contracts are done either through a central or regional government-contracting agency.

## 4-3. MILITARY LABORATORY BENCHMARK INDICATORS

a. The laboratory benchmark indicators are collected at each facility. The indicators from the different facilities will be used to establish peer groups based on relative case mix index, average daily patient load and inpatient work units for hospital based laboratories, and ambulatory work units and outpatient visits for clinic based laboratories.

b. The indicators are based on workload, manpower, and expense. Data from an entire calendar year is used for analysis. The indicators are derived from CHCS workload, Expense Assignment System–IV (EAS-IV), and MEPRS. The TARA team members do not validate the data but accept it as reflected in the reports. Attention to detail by the laboratory manager and staff inputting the data is vitally important if accuracy of data is to be assured. Laboratory management personnel should validate Uniform Chart of Accounts Personnel System (UCAPERS) and CHCS workload input on a monthly basis.

c. The following data is collected and tabulated during a requested or medical center site visit:

(1) Workload

(a) D codes: ancillary current procedural terminology (CPT) weighted procedures for 12 months and ancillary CPT reportable tests for 12 months.

(b) F codes: CPT weighted special programs procedures for 12 months and CPT reportable special programs tests for 12 months.

(c) Total workload: total CPT weighted procedures for 6 months and total CPT reportable tests for 12 months.

(2) Personnel

Full-time equivalents (FTEs) assigned
FTEs available
FTEs percentage available
Percentage of direct expenses (personnel)
CPT weighted/FTE (assigned)
CPT weighted/FTE (available)
CPT reportable tests/FTE (assigned)
CPT reportable tests/FTE (available)

(3) Expenses

D codes for ancillary cost/weighted test and ancillary cost/reportable test
F codes for cost/weighted test and cost/reportable test
Total workload for total cost/weighted test and total cost/reportable test

## 4-4. LABORATORY AUTOMATION

a. Single instrument automation is applicable to almost any facility that is performing testing in house. Automated analyzers are known for their “walk away” operations. The technician can load the analyzer with bar-coded samples, and the analyzer will automatically perform the tests while the technician leaves to perform other duties. Most Army MTFs that perform laboratory testing, with the exception of some of the smaller outlying clinics, will have some type of automated analyzer.

b. Total laboratory automation is the automation of all aspects of clinical pathology from specimen receipt to result reporting. In most cases, all automated analyzers are arranged in a track system that routes the bar-coded specimen tubes to the designated analyzers for tests to be performed. This process can eliminate a significant percentage of the staffing requirements of a laboratory. At the initial stages in the development of total laboratory automation, there was great market interest in adopting this process. As more facilities have investigated this process, it has been found that the greatest benefit can be achieved at large facilities performing high volumes of testing, up to 10 million aliquots per year. This high volume can be found at an 800- to 1,000-bed facility that is also receiving specimens from other facilities or at a commercial reference laboratory that supports nationwide operations. No Army facilities currently have a volume high enough to justify incorporating total laboratory automation. In the future, a DOD reference laboratory may be the place to consider total laboratory automation. However, as the majority of testing stays within the different medical centers and medical activities, testing volumes do not warrant total laboratory automation and currently is not a recommendation for any military facility.

c. Although total laboratory automation is not right for all facilities, many facilities are finding that there is potential in automation beyond that of the single automated analyzer. As a modification to total laboratory automation, work area automation has evolved. Work area automation takes a section of the laboratory and automates the processes within that section. The greatest benefit for work area automation has been achieved in the chemistry and hematology areas of the laboratory. A section can be arranged in a track mode similar to that of total laboratory automation where the laboratory worker takes the bar-coded specimens and places them on sample holders to be delivered to the various workstations. The workstations can then be set up to perform all designated tests, reflex any samples that do not meet a determined algorithm, and flag any specimens that may need manual testing. This takes the concept of total laboratory automation and uses it on a smaller scale. There are potential reductions in FTE requirements as well as increases in efficiency and reductions in manual handling.

d. In addition to automating test-work areas, pre-analytical stages also can be automated as part of this work area automation concept. In many facilities, specimen delivery and processing has been automated, benefiting the pathology department. Specimen delivery can be automated either through a pneumatic tube system, through a robotic delivery system programmed to perform any ward pickups as well as making programmed stops at all the different testing areas in the laboratory, or both. Automation of specimen processing can increase efficiency and decrease errors as a result of manual handling as well. Specimens that have been bar coded can be loaded into a modular system that reads the bar codes and sorts the specimens by the work area that will perform the tests. For specimens that need to be spun down, the modular system can be sent through a track system to a large centrifuge and spun before delivery to the work area.

e. Work area automation seems to be the best fit for Army facilities with high workload volumes. Costs will be much lower than that of total laboratory automation. The work cells can be designed around the current footprint of most facilities as opposed to reconstructing departments for total laboratory automation. FTE requirements can still be decreased within each work area.

f. Other issues exist that need to be addressed in considering robotics and automation. The first is determining what the workflow philosophy will be, depending on the needs of the laboratory. The second issue is looking at the pre-analytical stage. Should that stage be automated, and if not, what needs to be done in this stage to accommodate the automation of other sections of the laboratory? A third issue is determining which areas can benefit the most from automation. The laboratory manager should consider areas where there is a high volume of repetitive functions that require little thinking. If the facility is performing a high volume of routine chemistry but a low volume of special chemistry, it makes more sense to automate only the routine chemistry area. If there is a high volume of testing in an area but there is a lot of technologist interpretation involved, perhaps it would not be effective to automate this area. It is important to automate the work that requires little user interface. The tedious tasks that are being done by technologists should be automated so that these employees can be used more efficiently and appropriately.

# CHAPTER 5. MILITARY RADIOLOGY FUNCTIONAL ECONOMIC ANALYSIS

## 5-1. INTRODUCTION

a. The future of military healthcare will be characterized by access to high-quality care at anytime, anywhere, with total integration of patient records to the healthcare process. These requirements have brought to the forefront the limitations of the delivery of radiology services. Availability and accountability of diagnostic images are hindered by single access to images and by manual storage. Military readiness is impeded by the lack of timely interpretations in the field and the constraints of a chemicals-based system. Access to care may also be restricted by the limited availability of radiologists, especially in remote locations.

b. Along with these limitations, several external forces are affecting delivery of radiology services. Increased regulatory oversight, TRICARE competition, managed care, and the right-sizing of the DOD are just a few of the forces constraining radiology resources and altering healthcare delivery practices. The strategic direction of the MHS, the external forces influencing healthcare delivery, the limitations of film-based radiology, and the emergence of innovative technologies are all compelling reasons for change and contribute to the motivation behind this business process reengineering effort. At the time that it was published, The *FEA* (*BPR1255047-035*, September 4, 1996) represented the vision of the military radiology community and effectively prepared DOD radiology services to meet the needs of MHS beneficiaries in the most effective and timely manner possible. This document is still the most comprehensive analysis for Military Radiology. The TARA program works closely with the OTSG Clinical Consultants to ensure that this information is still relevant for and applicable to our mission.

## 5-2. GOALS OF MILITARY RADIOLOGY

a. The goal of military radiology is to be the premier provider of top-quality radiology services to all DOD health beneficiaries in any situation or environment. To attain this goal, a radiology work group developed several objectives and performance measures. Although these objectives and measures encompass the cost, quality, access, and readiness of radiology services, a primary emphasis was placed on satisfying the customers, including patients, clinicians who request radiology services, and line Commanders of the radiology department.

b. To successfully attain the objectives and meet performance measures, the work group defined several changes to the process and scope of radiology services. To improve image file availability and accountability and provider productivity, radiology must implement efficient image management by automating image storage and retrieval. To reduce wait times, eliminate unread exams, and improve provider satisfaction, military radiologists intend to provide “real-time” radiology services. Instead of the days or weeks that often elapse between a physician’s request and the transcribed diagnosis, radiology will provide immediate responses to all exam requests. A tri-service radiology department will improve radiologist productivity and education through the redistribution of its workload within and among Tri-care regions, thereby enabling greater access to quality services. This capability will also enable 24-hour on-line availability of radiology services to deployed forces. Decentralized radiology departments will improve responsiveness and consultative services as radiologists are physically relocated to specific high-volume clinical locations. Similarly, centers of excellence will be developed to increase the use and

effectiveness of consultations and second opinions. The result will be improved diagnostic accuracy leading to better patient care.

## 5-3. GOALS OF DIGITAL RADIOLOGY

a. To implement these improvements and others as well, digital radiology must become a reality. These improvements require immediate and simultaneous access to any image by those authorized to view and interpret diagnostic images. A PACS will facilitate acquisition, storage, and distribution of radiology images in a digital format. Teleradiology will enable this image management to take place among facilities, regions, and international boundaries.

b. The implementation of PACS and teleradiology will facilitate the real-time and simultaneous access to images by radiologists and providers. Unfortunately, radiology images represent only half of the equation. Adequate modality upgrades to meet digital requirements and DICOM conformance will provide a seamless interface between the modality and PACS. Transcribed reports must accompany each examination result. Voice recognition dictation systems will eliminate transcription backlogs as providers are enabled to dictate and verify reports without delay. In addition, enhanced telecommunication lines must be installed prior to implementation of teleradiology. The simultaneous and immediate availability of radiology images and reports will greatly enhance radiology services.

## 5-4. BUSINESS PROCESS IMPROVEMENTS FOR MILITARY RADIOLOGY

a. To facilitate the recommended business process improvements and the transition of military radiology to a digital environment, MTFs should work with the TARA team. The USAMMA TARA team and the APPMO will ensure Army uniformity by providing guidance and consultation to Army hospitals before and during the implementation of digital technologies. Although radiology is the primary generator of diagnostic images, PACS could also be implemented to support other diagnostic imaging specialties (e.g., cardiology or dentistry). The archival and distribution requirements should not differ among diagnostic specialties. The TARA team will ensure that, before any equipment is installed at a site, the business process changes and expected benefits are clearly understood and accepted by the site personnel.

b. The radiology work group recommends several other business process improvements. These include new and modified radiology activities and extensions beyond the scope of the FEA. Of primary importance are the following items:

(1) The monitoring of performance, business trends, and clinical practices. This function of monitoring performance, business trends, and clinical practices can be best facilitated by the TARA program;

(2) The establishment of working relationships with non-DOD federal agencies;

(3) The retention of military radiologists; and

(4) Standardization of the use of the CPT coding system.

c. Two alternatives were defined to accomplish the recommended business process improvements.

(1) Continuation of analog, film-based radiology services. This alternative is based on the standard staffing requirements needed to meet current workload levels. Currently, there is a shortage of military radiologists. As a result of negative feedback and the unlikely prospect of increased staffing during military downsizing, this alternative was deemed unfeasible.

(2) Transition to digital radiology. This alternative enables the recommended business process improvements through the technologies previously discussed. The primary cost drivers of this alternative are PACS, teleradiology, telecommunications infrastructure, and voice recognition equipment. The anticipated monetary benefits estimated for this alternative include reductions in the costs for film, chemical purchase and disposal, file room clerks, and transcription services. Other monetary benefits could be realized in reductions in the costs associated with medical evacuations, file rooms, darkrooms, chemical capture devices, malpractice suits, and contract radiologists.

## 5-5. DIGITAL TECHNOLOGY

a. The radiology work group unanimously agreed that the transition from film-based, analog systems to digital data acquisition, storage, transfer, and interpretation is necessary to maintain an edge in the readiness of our military forces and to improve the quality of services provided to radiology customers. The DOD-developed Medical Diagnostic Imaging Support (MDIS) system was the first tool used to accomplish this functionality. At the time of this functional analysis, the consensus of the radiology work group was that the commercial market for similar digital technologies was maturing. The group recommended that, although the DOD should continue to support installed MDIS systems and other current obligations, it should also seek less expensive solutions that used integrate, scaleable commercial-off-the-shelf (COTS) packages. The solution for digital imaging storage and distribution was the DIN-PACS contract awarded to Agfa and IBM. Modality compatibility with DIN-PACS is provided through compliance with the DICOM standards (see chapter 6). The successor to the DIN-PACS contract has been written to broaden the choice of vendors and was awarded in mid 2004.

b. The recommended functional improvements enabled by digital radiology will strengthen the MHS push towards attaining designation as the benchmark healthcare delivery system. The unified front presented here will enhance the joint medical readiness capabilities of the MHS. The digital transformation of radiology will enable the seamless integration of healthcare technology and the patients' records. The military radiology community is unified in commitment to the fulfillment of the recommendations that lie within this document.

## 5-6. RADIOLOGY PERFORMANCE MEASURES AND TARGETS

a. Performance measures are quantifiable indicators used to evaluate the effect of changes on functional processes. Managers typically use performance measures to gauge the amount, speed, quality, and cost of work done by an activity or function. These measures must be meaningful to the functional managers responsible for the activity. Furthermore, they must serve as indicators of the short-term impact of the business process changes and long-term contributions to the strategic direction of the MHS.

b. Sections 1 and 2 of *FEA* outline the goals of the MHS and the functional area of radiology. The radiology work group selected several performance measures that could be used to measure the degree of success in attaining those goals. Table 5-1 lists these

performance measures, the means of capturing data for these measures, the current levels of performance, and a 6- to 10-year target. Local managers should use these and other performance measures to steer change within their organization.

c. The *FEA* cited a survey sent in April 1996 to 102 of the radiology sites. Responses to this survey were used to establish a baseline for several performance measures. Seventy sites returned the surveys. The mean, standard deviation, and confidence interval were computed for each radiology site type. The averages referred to throughout the remainder are for all responding radiology sites.

d. Several performance measures can be used as proxies for satisfaction, but unless critical stakeholders are specifically asked, it is difficult to know whether they are satisfied. On the basis of a telephone survey to 12 randomly selected Army, Navy, and Air Force facilities, it is estimated that only about 47 percent of military radiology departments use provider-satisfaction surveys. The work group set as a target that all radiology departments survey a random sample of providers and patients to measure the performance of the department and to identify opportunities for improvement. The work group has developed satisfaction surveys for both providers and patients that can be used by radiology departments. These or other surveys can be tailored to site-specific needs. Once baselines are established for the surveys, results should be compared from year to year, taking appropriate actions if a degradation in performance is recognized.

## Table 5-1. PERFORMANCE MEASURES

| Performance Measure | Source of Data | Current Performance Level | 6- to 10-Year Target |
|---|---|---|---|
| Provider and customer satisfaction | Telephone survey | 47% of radiology depts. utilize provider surveys; 94% of radiology depts. utilize customer surveys | 100% use for each |
| Standards compliance | Telephone survey | 53% use ACR standards; 47% use ACR appropriateness criteria | 100% awareness and use |
| Cost per RVU | MEPRS Central (June 1995) | Average an 8.6% increase per year over the past 6 years. | Do not exceed rate of medical inflation |
| Diagnostic accuracy | Department of Legal Medicine | $24.1M in diagnosis-related claims since 1990; $3.86M due to a delay in diagnosis | Eliminate claims attributable to a delay in diagnosis; cut all others in half |
| RVUs/Radiologist (proxy raw procedures)[1] | DMIS-SS MEPRS Central (June 1995) JHMET | 14,815 raw procedures non-GME; 8,803 at GME locations | 12,316 raw procedures at non-GME sites; 7.919 at GME locations |
| Technologists and support per radiologist[1] | DMIS-SS (June 1995) Survey | 5.3 to 6.4 technologists and support personnel per radiologist | 4.5 technologists and support personnel per radiologists |
| Report turnaround[1] | Survey | 2.5 days | One hour |
| Image file availability and accountability[1] | Survey | 7.3% unavailable<br>2.9% unaccountable[2] | 99.9% availability and accountability |
| appointment wait time (days to available appointment) | CHCS | X-ray: 1 Mammo: 13<br>US: 10 Nuc Med: 4<br>CT: 6 Special: 6<br>MRI: 12 Angio/Inter: 3 | Competitive with wait times at civilian facilities |
| Unread examinations[1] | CHCS | Approximately 4.4% of exams are never read at 2 months[2] | All exams to be read |
| Fetch time[1] | Expert opinion | 2-20 minutes per search depending on location[2] | 2 to 3 seconds per retrieval |
| Radiation exposure | Digital equipment will measure | Not captured | Decrease by the reduction in repeat films |
| Technical repeats[1] | CHCS | 4.3%[2] | <1% |
| Medical evacuations (MEDEVAC) | Bosnia data | Not available | Eliminate med evacs for radiological reasons |

Acronyms:
ACR, American College of Radiology
CHCS, Composite Healthcare System;
DMIS-SS, Defense Medical Information System-Summary System
GME, Graduate Medical Education
JHMET, Joint Healthcare Management Engineering Team
MEPRS, Medical Expense Performance Reporting System
RVU, Relative Value Unit

[1]Data are for film-based performance and do not represent performance levels at PACS sites.

[2]These baseline measures are all significantly higher when accounting solely for larger radiology sites where the greatest number of procedures is performed.

e. Sites were surveyed randomly to determine the extent of the use of ACR standards and appropriateness criteria as department guidelines. ACR standards define specific guidelines such as radiation dose, personnel qualifications, and equipment specifications required for proper execution of radiology procedures. ACR appropriateness criteria specify the indications that substantiate the need for a radiological study. Both of these are designed to improve the quality and utilization of radiology services. The work group set as a target that every radiology department maintain a current copy of these guidelines, study their contents, and apply them as standards within the department.

f. From the MEPRS central database, the work group extracted radiology cost and workload data from 1990 to 1995. Data was pulled for the diagnostic radiology and nuclear medicine accounts. This measure includes all direct and indirect costs divided by total weighted workload reported in MEPRS. Through the course of this 6-year reporting period, workload reporting has changed. After 1993, the relative value scale was adjusted, thereby greatly increasing the number of RVUs for a given set of procedures. Because of this, the group chose to analyze the trend of cost per RVU from 1990 to 1993 and again from 1994 to 1995. Through the course of these years, the cost per RVU has averaged an 8.6 percent increase per year. The radiology work group believes that the increase in this performance measure should not exceed the rate of medical inflation. In the past this rate has exceeded 10 percent; current projections indicate a 5 percent rate in the short-term future. Yearly MEPRS data can be used at the local, service, and DOD levels to measure success in attaining this performance measure. For this metric to be meaningful, reporting must be accurate and consistent between years. Therefore, 1996 should be used as the baseline, since CPT coding has been assumed as the workload recording methodology for all of radiology.

g. To ensure diagnostic accuracy, radiology departments must maintain and perform proper quality assurance procedures (e.g., quality reviews, including access to experts as well as earlier diagnosis). The work group chose to analyze diagnostic accuracy from the standpoint of medical malpractice claims. The Department of Legal Medicine maintains a database of military medical malpractice cases, including the allegations and case outcomes. The records indicate that, in the 1990s, $15,900,000 has been paid for claims related to radiology services. These claims are identified by specialty code “S,” which is indicative of a radiologist or clinical service code DCA or DCB, indicating diagnostic or therapeutic radiology, respectively. Assuming that this is only 60 percent of the actual cases, radiology is likely responsible for approximately $26,500,000 in malpractice claims. Of the claims identified, 91 percent of the dollar value ($24,100,000) has been for diagnosis-related allegations. Sixteen percent of these ($3,860,000) have resulted from a delay in diagnosis. The work group believes that in the future there should be no claims attributable to a delay in diagnosis. Although they would like to eliminate all radiology malpractice claims, they have realistically set a target of a 50 percent reduction in the number and dollar value of other diagnosis-related claims.

h. Two sources were identified that specify the appropriate staffing levels for a given level of radiology workload.

(1) One, the *Joint Healthcare Manpower Standards Development Study*, was developed by the JHMET in August 1994.

(2) The other, *Productivity of Radiologists: Estimates Based on Analysis of Relative Values Units*, was developed by the ACR in December 1991.

Both publication sources provide guidelines that specify the number of radiologists required for a range of total procedures and weighted workload. Both studies report

consistent findings. The DOD has switched to the Medicare reimbursement CPT methodology for capture and reporting of workload data. Unfortunately, the RVUs previously reported in MEPRS are not the same as the Health Care Financing Administration RVUs reported using the CPT system. Accordingly, the work group chose to analyze raw procedures per radiologist (as opposed to weighted workload RVUs), as raw procedure counts provide a relatively stable measurement from year to year. Although variations in the complexity of workload may exist at a particular site, the overall case mix throughout the DOD will vary only slightly. According to the JHMET study, there should be one radiologist for every 12,356 procedures performed at a non-GME facility. A GME facility should have one radiologist for every 7,919 procedures performed. Workload data for 1995 from the MEPRS summary system and FTE data from the Defense Medical Information System (DMIS) summary indicate that non-GME sites currently perform 14,815 procedures per radiologist and the GME sites perform 8,803 procedures per radiologist. These data indicate that military radiologists on average exceed workload targets and that the DOD is understaffed for radiology services. This represents another force for change identified by the work group.

i. The *Joint Healthcare Manpower Standards Development Study*, August 1994, estimated that approximately six technologist and support staff personnel should be available for every radiologist within a department. For facilities without a radiologist, one technologist is required for every 1,500 procedures. According to the radiology data collection survey and the DMIS summary, military radiology departments had on average 5.3 and 6.4 technologists and support staff, respectively, for every radiologist in 1995. Most sites are close to the established JHMET standard. The radiology work group predicts that changes in radiological technology will reduce the required support personnel. The work group has set the 10-year target at 4.5 technologist and support personnel for every radiologist.

j. Report turnaround time is the time that elapses between the execution of a radiology procedure and the availability of a transcribed report. Often clinicians spend days or even weeks waiting for the written interpretation before rendering a decision regarding the delivery of health services to a given patient. As reported in the radiology data collection survey, it takes 2.5 days, on average, before a transcribed report is available. The radiology work group has set 1 hour as a 10-year target for this measure. Reducing this time can significantly improve the quality of care.

k. The radiology data collection survey requested that each site obtain a random sample of 50 exams obtained within the last year. Of those 50 exams, the sites reported the number of films that were unavailable. A film may be unavailable because it is checked out by a clinician, improperly filed, or lost. Sites were also asked to specify how many of the images were unaccountable (the location of the film was not known). Of the surveyed sites, 7.3 percent of the images, on average, were unavailable, and 2.9 percent were unaccountable. These figures are greater at large medical centers where the greatest number of procedures is performed. In a survey of 100 consecutive requests at the Naval Medical Center, San Diego, CA, more than 20 percent of requested films were either lost or unavailable. Lost films are another factor in medical malpractice lawsuits faced by radiology departments. In addition, availability and accountability of radiology images and reports affect the timeliness and quality of care. The work group believes that the appropriate target should be at least 99.9 percent availability and accountability of images.

l. To be the provider of choice for MHS beneficiaries, the work group believes radiology services must be provided in a timely fashion. If military radiology services cannot be provided within the same time frame as civilian healthcare sources, business

will be lost to civilian contracts. Radiology sites reported from CHCS the number of days until the next available outpatient appointment for each of the radiology modalities. An attempt was made to obtain similar data for civilian hospitals from the ACR. The data were not available. Instead, several Northern Virginia hospitals were called with the intent of scheduling an appointment for each radiology modality.

m. The surveyed sites that have CHCS available were asked to query this database for the number of radiology procedures performed during a 2-month period. Of those procedures, they were asked to identify how many that CHCS indicated as never having been interpreted. On average, 4.4 percent of the studies were never diagnosed. Some large hospitals exceeded a 20 percent unread exam rate. The radiology work group contends that if proper utilization is taking place, all radiology studies should be interpreted with a transcribed report. They have set as a 6-year target that all studies be interpreted.

n. Early results from the pre-MDIS installation study indicate that clinicians typically spend 2 to 5 minutes each time they search for an image file. These findings are reflective of smaller hospitals and clinics where exam counts and file rooms are smaller. At larger medical centers, it is estimated that 20 minutes elapse from the time a request is made at the front desk until the film is handed to the requester. Greater than 20 percent of those searching for films left without them according to a survey at San Diego Naval Medical Center. This time spent retrieving films can amount to several hours a week for high-use areas such as the pulmonary and orthopedic sections. The work group anticipates significant reductions in fetch time with the implementation of digital technologies. Electronic storage will likely enable access to any locally stored image within 2 to 3 seconds.

o. Film-based analog radiology does not provide a mechanism to monitor the degree and amount of radiation to which a patient is exposed; therefore, there is no baseline for radiation exposure. Digital systems provide the capability to capture the amount of radiation exposure for each exam. The work group believes a baseline measurement should be established for each exam and in the aggregate for each patient as digital imaging is implemented within the DOD. This would enhance the quality of healthcare by giving practitioners the ability to determine and avoid dangerous levels of exposure. This performance measure needs to be captured, monitored, and standardized for the various imaging modalities and exam types. The ACR guidelines previously discussed provide standards with respect to the levels of radiation not to be exceeded for the various exams. As a target, the work group suggests that radiation exposures be reduced by the equivalent reduction in the number of technical repeats.

p. Repeat films are the number of films of any given examination deemed to be of non-diagnostic quality. Among other things, this could include underexposure, overexposure, poor patient position, processing error, or equipment error. According to the surveyed sites, approximately 4.3 percent of radiology exposures are repeated because of one or more of these errors. This error figure is commonly in the 10 percent to 12 percent range for teaching facilities. Digital radiology should eliminate almost all repeat films attributable to the exposure or processing errors, which constitute most repeat films. They set 1 percent or less as a target for repeat examinations.

q. Lack of expert diagnosis in deployed military situations often requires that people or films be transported to ensure high-quality care. When this happens, an individual may be lost from service unnecessarily. In addition, it is a time-consuming and expensive process. A goal of military radiology is to eliminate all medical evacuations that occur because of the need for a radiological diagnosis. If the results of a diagnosis are

positive, evacuation for health reasons is acceptable. The work group wants to avoid situations in which an individual is evacuated solely for radiological diagnosis. They also want to avoid the situation where the lack of availability of an appropriate diagnosis precludes the timely evacuation of patients from remote or deployed locations. This situation directly impacts the timeliness and quality of care received.

# CHAPTER 6. DIGITAL IMAGING AND THE DIGITAL IMAGING COMMUNICATION IN MEDICINE (DICOM) STANDARD

## 6-1. INTRODUCTION

a. Digital imaging has streamlined processes within the radiology department. Most of the tasks related to film production, transcription, and filing have been eliminated and replaced with the acquisition and storage of data on-line. To support digital imaging and the re-engineering of the radiology department, all new purchases and upgrades will support the DICOM 3.0 standard. All diagnostic imaging modalities will ultimately conform to DICOM standards. Currently, focused purchases of DICOM-conformant systems will facilitate the integration of acquisition devices to a Hospital or Radiology Information System (HIS/RIS), an image management system, or a PACS.

b. The ACR and the National Electrical Manufacturers Association (NEMA) jointly developed the DICOM Standard to facilitate interoperability of medical imaging equipment, regardless of the device manufacturer. The DICOM standard facilitates interoperability of medical imaging equipment by specifying the protocols to be followed by devices claiming conformance to the standard and the syntax and semantics of the information exchanged using these protocols. The DICOM standard supports operation in a networked environment using industry standard networking protocols such as transmission control protocol/internet protocol (TCP/IP). Provision of the applicable DICOM service object pairs (SOP) classes is ultimately required for integration with a PACS.

c. Two sets of specifications follow: a subset of the DICOM standard that is required to provide basic functionality and a set of specifications that is not required but highly recommended to accommodate workflow and data integrity.

## 6-2. REQUIRED SERVICE OBJECT PAIRS FROM THE DICOM STANDARD

a. The DICOM standard relates an object (image) to a service (action) to be performed on that object. These relationships are defined within the DICOM standard as SOP. To exchange image data, each modality should support the DICOM 3.0 image storage SOP class for that modality as shown in Table 6-1, e.g., a computed tomography (CT) should comply with the CT image storage SOP class, ultrasound with the ultrasound SOP class, etc. To send or receive DICOM objects such as images, support to a DICOM SOP class can be as a service class user (SCU), a service class provider (SCP), or both. At a minimum, the modality must support the image storage SOP class as an SCU.

b. Besides conforming to the individual modality image storage SOP classes, all acquisition devices should support the DICOM 3.0 verification, query/retrieve, modality performed procedure step, modality worklist management, and the print management SOP classes (Table 6-1). In addition, for CT and MR and possible other future modalities, query/retrieve should be supported.

c. DICOM verification allows one DICOM-conformant system to “ping” or request a communication transaction with another DICOM-conformant system and verify that the systems can talk to each other.

d. DICOM query/retrieve conformance allows the a modality-specific post-processing workstation to interactively retrieve images from other acquisition or storage devices, soft-copy display workstations, teleradiology spokes/hubs, and other PACS. Query/retrieve conformance is not required for devices intended to function solely as a modality operator console, except for CT, MR, and possibly digital mammography.

e. The modality performed procedure step SOP class allows a modality to inform the PACS and the modality worklist manager that an exam has been completed.

f. Conformance to the modality worklist information model find SOP class as an SCU allows patient demographic and scheduling data from the RIS/HIS to be retrieved from an acquisition modality console and also allows the technologist to select the patient information from a “pick list” or using an accession number or patient ID, rather than retyping the patient information. This capability enhances the efficiency and overall productivity of the technologist and reduces errors in patient demographic data that might result in exams that cannot be matched with the original order or other study components. The result should improve workflow and efficiency because data errors typically have to be corrected by a PACS system administrator.

g. DICOM print management conformance facilitates networking of image printers using standardized protocols. This should eliminate the added expense of procuring individual interfaces for each acquisition device and printer.

## 6-3. RECOMMENDED SERVICE OBJECT PAIRS FROM THE DICOM STANDARD

a. It is desirable that, in addition to the requirements listed in Table 6-1, the modality provides conformance to other DICOM 3.0 SOP classes.

b. The storage commitment push model SOP class ensures safe storage of the image data by the PACS before the data is deleted from local storage at the acquisition device (modality). This ability is important when sending images to a remote location, because the sender can rely on the receiver to take responsibility for the data.

c. Grayscale softcopy presentation state SOP class allows a modality to specify the intended image presentation state of the exam.

d. Grayscale display and print SOP classes will allow all display stations and all printers that support the associated SOP class to reproduce that image with uniform grayscale. Thus, all images will look that same regardless of where they are reproduced.

e. The basic annotation box and image overlay box SOP classes allow text and graphic annotations to be appended to the image data set without permanently overwriting the original image data. These SOP classes also provide a mechanism to output pertinent demographic, management, and graphic information to hard copy print devices without overwriting the original image data.

f. It is also highly desirable that the acquisition devices provide removable media, conforming to the DICOM media exchange application profiles as specified for that modality (e.g., CT or MR, x-ray angiography, ultrasound, or general purpose radiography) using CD-R or magneto-optical disk to allow file exchange between workstations/facilities and to support failover operations in the event the network or PACS is down.

**Table 6-1. REQUIRED MODALITY DICOM SERVICE OBJECT PAIR CLASSES**

| SOP Class Name | SOP Class UID | Role |
|---|---|---|
| MR Image Storage | 1.2.840.10008.5.1.4.1.1.4 | SCU |
| CT Image Storage | 1.2.840.10008.5.1.4.1.1.2 | SCU |
| Computed Radiography Image Storage (Note 1) | 1.2.840.10008.5.1.4.1.1.1 | SCU |
| Nuclear Medicine Image Storage | 1.2.840.10008.5.1.4.1.1.20 | SCU |
| Secondary Capture Image Storage (Note 2) | 1.2.840.10008.5.1.4.1.1.7 | SCU |
| Ultrasound Multiframe Image Storage | 1.2.840.10008.5.1.4.1.1.3.1 | SCU |
| Ultrasound Image Storage | 1.2.840.10008.5.1.4.1.1.6.1 | SCU |
| X-Ray Angiographic Image Storage | 1.2.840.10008.5.1.4.1.1.12.1 | SCU |
| X-Ray Radiofluoroscopic Image Storage | 1.2.840.10008.5.1.4.1.1.12.2 | SCU |
| Digital X-Ray Image Storage - For Presentation (DR) | 1.2.840.10008.5.1.4.1.1.1.1 | SCU |
| Positron Emission Tomography Image Storage | 1.2.840.10008.5.1.4.1.1.128 | SCU |
| Digital Mammography Image Storage – For Presentation | 1.2.840.10008.5.1.4.1.1.1.2 | SCU |
| Digital Intra-oral X-Ray Image Storage – For Presentation | 1.2.840.10008.5.1.4.1.1.1.3 | SCU |
| Mammography CAD SR | 1.2.940.10008.5.1.4.1.1.88.50 | SCU |
| Verification | 1.2.840.10008.1.1 | SCU/SCP |
| Patient Root Query/ Retrieve Information model-FIND (Note 3) | 1.2.840.10008.5.1.4.1.2.1.1 | SCU/SCP |
| Patient Root Query/ Retrieve Information model-MOVE (Note 3) | 1.2.840.10008.5.1.4.1.2.1.2 | SCU/SCP |
| Study Root Query/ Retrieve Information model-FIND (Note 3) | 1.2.840.10008.5.1.4.1.2.2.1 | SCU/SCP |
| Study Root Query/ Retrieve Information model-MOVE (Note 3) | 1.2.840.10008.5.1.4.1.2.2.2 | SCU/SCP |

(continued) Table 6-1. Required Modality DICOM Service Object Pair Classes

| SOP Class Name | SOP Class UID | Role |
|---|---|---|
| | | |
| Modality Performed Procedure Step | 1.2.840.10008.3.1.2.3.3 | SCU |
| Modality Worklist Information Model-FIND | 1.2.840.10008.5.1.4.31 | SCU |
| Basic Grayscale Print Management Meta SOP Class | 1.2.840.10008.5.1.1.9 | SCU |
| Basic Color Print Management Meta SOP Class | 1.2.840.10008.5.1.1.18 | SCU |

**Note 1:** As an alternative, computed radiography devices can support digital x-ray image storage - for presentation SOP class

**Note 2**: Secondary capture image storage is required for x-ray film digitizers and any devices which capture and convert print output from legacy modalities to provide a DICOM interface.

**Note 3**: Query/retrieve is required for modality-specific post-processing workstations, but is not required for devices intended to function solely as an operator console. It may be desired for the operator consoles of certain modalities, such as CT or MRI, where the operator may wish to have specific knowledge of the images acquired in a previous study.

## 6-4. OBJECT IS IMPROVED ACCESS TO RADIOLOGY

The object is to support business process changes throughout the MHS, especially within the practice of military radiology. The vision for radiology is to create a seamless radiology department by eliminating the constraints that may be created by having multiple places where diagnostic imaging is conducted within and between Army and other DOD MTFs.

# CHAPTER 7. PICTURE ARCHIVING AND COMMUNICATION SYSTEM (PACS) AND TELERADIOLOGY SYSTEMS

## 7-1. INTRODUCTION

a. The APPMO was chartered within the U.S. Army Medical Research and Materiel Command (USAMRMC) at Fort Detrick, Maryland, effective 19 March 2001. The APPMO is a corporate level coordination, execution and policy-making body that crosses functional elements of the AMEDD.

b. The creation of this Program Office reflects TSG direction to ensure the AMEDD PACS program is effectively managed and that PACS requirements are appropriately defined against the clinical need and supporting business case, prioritized and embedded throughout the AMEDD. A continuous assessment by this office will also identify improvement opportunities in support of AMEDD PACS initiatives.

c. The APPMO mission is to develop the Army's strategic vision for PACS and other medical imaging information systems as they evolve. The APPMO is responsible for executing the Army's PACS and teleradiology program to ensure successful and coherent planning, deployment, integration, sustainment and life cycle management to the Army's greatest clinical and financial benefits.

## 7-2. APPMO RESPONSIBILITIES

The APPMO is responsible for the following:

a. Conduct program and acquisition management to plan, organize, direct and control the proliferation and life cycle management of the AMEDD PACS and teleradiology systems.

b. Develop and sustain a business plan for AMEDD PACS with applicable consultants, the Army Medical Department Center and School (AMEDDC&S) and the USAMEDCOM. Build and manage the program objective memorandum (POM) for AMEDD PACS and teleradiology.

c. Continuously assess the state of fielded PACS systems within the AMEDD.

d. Manage pre-deployment, project management, implementation, and acceptance testing activities for newly procured PACS and major PACS upgrades.

e. Manage configuration control, ensure successful integration and interoperability, and champion life-cycle management of PACS by building integrated process team (IPT) partnerships with other AMEDD organizations.

f. Coordinate with AMEDDC&S and the USAMEDCOM to ensure PACS and teleradiology acquisitions are synchronized for TDA and TOE.

g. Coordinate with USAMEDCOM Assistant Chief of Staff for Installations, Environment, and Facility Management (ACSIE&FM), and Assistant Chief of Staff for

Information Management to identify site preparation and network augmentation requirements.

h. Coordinate with the Tri-service Infrastructure Management Program Office (TIMPO) to identify MTF network infrastructure requirements in support of PACS and teleradiology.

i. Work closely with the USAMMA to ensure PACS and PACS-related systems are included in the TARA processes.

j. Ensure that the AMEDD PACS vision and associated requirements are continually updated, integrated with other AMEDD and MHS, medical information systems and built into the acquisition process so that equipment to be fielded can be operated, maintained, and supported efficiently and effectively.

k. Ensure that necessary policy, plans and controls are in place and updated when required, and that appropriate organizations are capable of executing PACS initiatives in a manner consistent with the clinical business practices defined by the TSG Radiology Consultant and Regional Radiology leadership.

## 7-3. PROGRAMMING AND FUNDING

a. Each year the APPMO refines the PACS/teleradiology strategic plan and out-year budget estimate. The TSG Radiology Consultant will review and offer advice toward this final plan/requirement.

b. The APPMO prepares a briefing of the finalized plan for presentation to the STCPC. The STCPC reviews the plan and recommends the appropriate level of OP and OM funding for PACS and teleradiology in the next FY's program. APPMO participates in senior executive briefings as necessary to support the STCPC approval process, or if requested by the Deputy Surgeon General (DSG) or TSG, APPMO briefs the senior executives on the status of the program and related funding levels. The consultant should be a part of this briefing team or available to the brief as necessary to demonstrate functional Radiology Consultant and programmatic concurrence to the decision makers.

c. Once senior executives grant approval, USAMEDCOM provides funding to the APPMO for the program.

(1) MEDCASE-funded requirements are prepared by the APPMO and entered into the WebMRE system by the USAMMA. The USAMMA forwards the requirements to the TSG Radiology Consultant via transmittal. The APPMO obtains document numbers from sites targeted in the funded plan and the USAMMA submits requisitions to DSCP.

(2) For OM-funded requirements APPMO will prepare and forward funding for procurement to DSCP. The APPMO will obtain document numbers from individual sites.

d. APPMO coordinates clinical/network assessment site visits as necessary with the regions and provides the opportunity to the radiology consultant to discuss enterprise business processes with the applicable regional radiology chair.

e. The regional radiology consultant reviews their respective regional radiology business strategy and reaches consensus with the APPMO on the capability which can be achieved with available funding. This plan serves as the baseline requirement for all system acquisitions within the region.

f. The APPMO works with DSCP, or other contracting agencies as appropriate, to negotiate best lifecycle pricing and ultimately reach contract award with the most appropriate vendors, monitors contract execution, and fields and accepts the systems.

## 7-4. PLANNING AND ASSESSMENTS

a. Planning and assessments are a continuous process that begins long before funds are obtained by the APPMO from the USAMEDCOM.

b. PACS are medical systems that traverse an MTF's enterprise both clinically and physically. In some larger sites, these complex systems are composed of hundreds of devices that must be placed on the site's property book. Establishing a site cross-functional project team to organize and focus the efforts onsite is essential to the successful implementation and/or modernization of a PACS in a facility. The site project team consists of key stakeholders, often including representation from senior management, radiology, information management, logistics (e.g., medical maintenance, property book officer, etc.), facilities management, nursing, and referring physicians. The team assists in all aspects of system rollout, including planning, implementation, government testing, and training. In addition, establishing a medical center or RMC-level executive project team prior to a new installation or a major system upgrade has proven to be an effective tool in facilitating the project planning process.

c. When a site initially implements PACS, identifying the site PACS system administrator (SA) early in the planning process is essential. Ideally, there is a PACS SA from radiology to administer the day-to-day clinical operations of PACS throughout the enterprise, and a PACS SA from information management to administer the PACS servers and related internal and external telecommunications. To ensure efficient operations of the PACS, the local command must allow sufficient time for each SA to perform their daily duties. The amount of time required for radiology and the Information Management Division (IMD) PACS' SAs depends on the size of the MTF, the inventory of PACS devices installed, and the extent of compliance by the end users to the local digital imaging policy and procedures.

d. The APPMO assigns a project manager to advise the region and sites in getting organized into project teams of the proper functional types, and preparing for the clinical and network assessments to follow.

e. Initial site visits are conducted by the APPMO as part of the planning phase to educate as well as to gain a greater understanding of the environment and requirement. These site visits focus on the following two areas:

(1) The clinical assessment focuses on analyzing the workflow and identifying clinical requirements (e.g., quantity, proposed locations, and types of PACS workstations, specific imaging modalities and their locations, and assessing the

current print backup capability). This assessment is performed by the clinical component of the APPMO office, the APPMO network engineer, and the appropriate site project team personnel.

(2) The network assessment focuses on the data transfer aspects of either installing a new system, or modernizing an existing system. Areas assessed are the capacity of the current network infrastructure to support the proposed PACS components in the required locations; existing cabling and if any additional cabling is required; existing uninterruptible power supply (UPS) capacity, emergency generator power capability, and physical space in the data center for the core PACS hardware. The team also documents existing networking hardware, performs an assessment of network security, and documents the existing capacity of all pertinent wide area network connections. The network assessment is performed by the network engineering component of the APPMO, and the appropriate site project team personnel.

f. The clinical/network assessment results in a detailed report that includes or identifies the following:

(1) A list of existing equipment to be integrated, including locations and status

(2) Proposed locations for new equipment

(3) Identification of workflow issues or problems that may benefit by the implementation of PACS (or possibly re-engineer one or more workflow issues for more efficient operations)

(4) Critical networking, security, or bandwidth issues that should be addressed with recommendations for resolution

(5) Any high-level site preparation or cabling required for the project.

## 7-5. SITE/REGIONAL PROJECT TEAM ACTIVITIES — ASSESSMENTS AND IMPLEMENTATIONS

a. For each site survey and implementation a site project team consisting of the APPMO regional project manager, the RMC project manager, site project manager, and site participation from the diagnostic imaging, IMD, medical maintenance, logistics, and facilities sections is essential for the smooth and efficient implementation of PACS. The project team is responsible for the following tasks:

(1) Identifying all imaging modalities and printers to be integrated into the PACS.

(2) Identifying the number, type and location of workstations to be installed or upgraded, as balanced against available funding. What is minimally required?

(3) Reviewing alternative timelines for implementation and training, and ensuring that timelines for installations/upgrades do not interfere with MTF clinical operations.

(4) Identifying and developing an approach for information assurance documentation, required facility renovations, and training schedules.

b. Typically the USAMEDCOM and the TIMPO are responsible for all network infrastructures at MTFs in support of PACS and teleradiology. However, when the PACS network assessment is conducted, if there are significant PACS-focused networking and security issues that cannot be resolved quickly through the USAMEDCOM, the APPMO seeks additional funding to augment the infrastructure for optimum performance of PACS. This may be done at the expense of the regional PACS budget, so all efforts are made to have the USAMEDCOM appropriately support this area through their Information Management/Information Technology (IM/IT) budgets.

c. Site preparation requirements for PACS implementation are jointly developed by the site and the APPMO clinical survey team. While the APPMO can help identify the requirements, the site is ultimately responsible for programming/ requesting site preparation funds.

d. Specific requirements

(1) Computer room/data center — many computer rooms do not have adequate space for the placement of PACS storage devices and associated PACS equipment.

(2) Radiologist viewing/reading rooms — inadequate viewing areas; transitioning from film viewing to soft-copy displays require physical changes to the viewing environment (i.e., heating, ventilation, and air-conditioning, UPS, ambient light reduction, light diffusers, anti-reflective surfaces, and anti-reflective paint for walls).

e. The APPMO with the USAMMA identifies requirements for modality integration — seamless modality integration using standard DICOM protocols. The cost of upgrading modalities to provide the minimum-required DICOM functionality for interoperability is borne by the MTF/region as an operating expense, unless the upgrade qualifies for MEDCASE funding.

f. A CHCS interface is required to promulgate patient demographic information to the PACS. The CHCS interface is currently unidirectional; however future requirements call for a bidirectional interface.

## 7-6. VENDOR SELECTION

a. For large new system procurements or major modernization projects the APPMO, in conjunction with the regional project team, develops a RFP on a regional basis. The intent is to optimize sustainment and minimize cost through regional standardization of PACS configurations. The request for information/request for proposal (RFI/RFP) clearly defines regional PACS requirements within the system lifecycle (presently 8 years) and “locks in” acquisition and sustainment costs for that region over the 8-year period.

b. The APPMO, with participation and assistance by the regional project team, selects a vendor for the region. Vendor selection is based on clinical preference and overall cost of ownership for the life of the product.

(1) The APPMO project manager and selected APPMO staff, along with selected members of the regional project team, comprise the evaluation panel. The evaluation panel reviews the vendor technical proposals and evaluates clinical fit, past performance, lifecycle cost, and delivery. The panel summarizes their findings and renders a recommendation of the optimal solution to the APPMO project manager.

(2) The APPMO project manager considers the recommendation of the evaluation panel and may either approve as is or request further due diligence and supporting rationale for the vendor selection. The APPMO project manager makes the final award decision. If the site disagrees with the selection, the Principal Assistant for Acquisition, USAMRMC, is the final authority for award.

c. After a vendor has been selected, the APPMO works with the DSCP to issue a delivery order against the DIN-PACS II contract.

d. For smaller system procurements such as the addition of a hub or spoke teleradiology node to an existing teleradiology system, or minor site level upgrades or enhancements to existing systems (typically valued at less than $500,000), the APPMO works directly with the regional project team to fine tune the requirement and negotiates with vendors to get best pricing before requesting DSCP (or other contracting agencies) to cut contracts for equipment.

## 7-7. ACCEPTANCE TESTING

a. The USAMMA is responsible for managing the acceptance test program for PACS throughout the AMEDD and has matrixed personnel within the APPMO for this purpose. Final acceptance of the installation is made by DSCP based on the results of acceptance testing, which is coordinated through APPMO as the central decision authority for PACS and teleradiology programs.

b. System acceptance inspection testing shall include complete inspection and verification of functional operation of the DIN-PACS, including all ancillary components and turnkey installation. The acceptance test verifies that the system and the turnkey installation comply with the DIN-PACS II contract requirements as well as the contractor's published specifications. If the contractor's specifications furnished with his technical proposal exceed the Government's requirements, the Government tests and accepts the system on the contractor's specifications. In all other cases, in the event of any other conflict between the contractor's published literature and the requirements of the specification, the requirements of the specification shall take precedence. Noncompliance with any specified requirements or presence of one or more defects may constitute cause for rejection.

c. On completion of installation of all equipment and systems software comprising the system as defined in the site specific delivery order (and turnkey installation), the contractor furnishes a written notice of readiness for inspection of the system (and turnkey installation) to DSCP. With this notice, the contractor certifies in writing that:

(1) The particular system is installed
(2) The system is ready for acceptance testing
(3) The system complies with the manufacturer's specifications AND with all the requirements of the DIN-PACS II contract specification

d. The contractor makes its best effort to provide an estimate of expected date of readiness to DSCP roughly 2 to 3 weeks in advance (the contractor will not be bound by this estimate) to allow both the government and contractor additional time to plan personnel schedules.

e. The acceptance inspection test shall be conducted only on a complete, integrated system. The acceptance inspection test consists of a series of validation steps for each requirement in the DIN-PACS II contract and includes tests to validate both component performance and system integration performance.

(1) Testing is conducted in accordance with the most current version of the government's clinical use determination/acceptance testing (CUD/AT) protocol available at the time of acceptance testing.

(2) The Government first conducts a basic level of testing as defined in the CUD/AT protocol to make a CUD. The CUD/AT inspection will normally be conducted during a single, continuous testing period. The vendor is responsible for connecting test equipment and operating the system during inspection testing. Minor discrepancies that may be corrected during the inspection shall not be cause for rejection.

(3) If acceptance inspection testing has not commenced within 30 calendar days from date of receipt of the contractor's notice of readiness for inspection, the government shall accept the system, and subsequently set final acceptance of the system as the date of notice of readiness for inspection.

(4) If the system is rejected as a result of the CUD/AT inspection, the contractor shall be advised via letter from DSCP as to deficiencies which were cause for rejection. It is the contractor's responsibility to correct reported deficiencies and advise DSCP in writing when all corrections have been made and equipment is ready for re-inspection. Re-inspection shall be performed by the Government with all costs incurred chargeable to the PACS vendor.

(5) If deficiencies found at the time of CUD/AT inspection are corrected within 30 calendar days after receipt of the deficiency letter from the contracting officer, final acceptance will be issued on validation of deficiency correction by the government, and the start date for the warranty shall be backdated to the date of CUD.

f. Other systems or equipment items purchased with the PACS, and not covered under the DIN-PACS II CUD/AT protocol may also be tested during the system acceptance test. Systems will be tested per the manufacturer's protocols for commercial testing unless an appropriate government testing protocol is available.

## 7-8. SUSTAINMENT

a. The APPMO is the corporate champion for the PACS maintenance and sustainment IPT. The team has a multi-functional mix of clinical, medical maintenance, IM/IT, and project management personnel with a primary focus on the product as it supports the medical mission, and the overall costs of its sustainment. The IPT is responsible for recommending ways to minimize the sustainment costs for

PACS while at the same time balancing cost reductions with maximizing the clinical availability of this mission-critical medical system.

b. The approach of the IPT includes the following:

(1) Define the requirements for maintenance by identifying maintenance intensive items

(2) Measure/assess operational and clinical availability in terms of up-time performance

(3) Analyze the derived benefit gained through contracted service programs

(4) Improve/increase maintenance efficacy through training and modified service contracts

(5) Control the maintenance program by continuously evaluating organizational needs – clinical and operational

c. With the emergence of new technologies, such as PACS and teleradiology, comes the requirement for identifying ownership and management of these medical systems. Medical device tracking and management is paramount to successful Joint Commission on Accreditation of Healthcare Organization (JCAHO) inspections. However, many AMEDD MTFs erroneously consider these systems to be IT systems which do not require the same level of accountability and management as medical devices. This places the AMEDD at risk, due to lack of historical documentation and understanding. All Food and Drug Administration (FDA)-approved medical devices and systems/subsystems must be listed in the site's property book, and all maintenance and changes to the product tracked in the appropriate device history record.

d. In addition to the asset management requirements to support these systems, facilities must recognize that local support resources must be trained and made available across a number of functional areas within each facility to realize the clinical efficiencies associated with these systems. The functional areas impacted most heavily by the installation of PACS are the following:

(1) Radiology department. Provides clinical systems administration support.

(2) IM/IT department. Provides technical systems support for distributed devices, networks, and core PACS equipment located within the facility data center and protects all medical devices from attack or non-vendor modification through the use of firewalls and network security policies. Details of how the corporate IM/IT community will conduct its efforts and the policies to protect all medical devices are still being considered at the time of the writing of this publication. Questions concerning information assurance and network security should be addressed to the local, regional, and corporate chief information officer for the latest policies and procedures.

(3) Logistics/clinical engineering division. The Property Accountability Branch manages device history records and performs scheduled and unscheduled services on distributed medical devices/systems, as well as managing service

contracts on the systems. Whether medical maintenance or IM/IT provides support for medical workstations is still being decided at the time of the writing of this publication. Monitor calibration falls under the medical maintenance purview, and networking falls under IM/IT. Most likely, the vendor will maintain the clinical application software for workstations and servers.

## 7-9. PROPERTY ACCOUNTABILITY AND MAINTENANCE MANAGEMENT OF DIN-PACS

a. USAMEDCOM maintenance activities ensure the DIN-PACS system and all components are properly accounted for in the DMLSS. Device tracking is a requirement of JCAHO. Appendix A contains detailed procedures.

b. Documentation of scheduled and unscheduled maintenance within the maintenance module of DMLSS is key for proper accountability and provides data necessary to categorize cost drivers and identify tasks performed as part of a comprehensive government program to reduce costs associated with DIN-PACS. Accurate property accountability also assists activities when making corporate decisions regarding requisite skills or training to sustain DIN-PACS.

c. Each year, the APPMO requests maintenance quotes for all regions from the PACS vendors. These quotes are used by the APPMO to develop the PACS and teleradiology maintenance funding requirements for the next fiscal year. The APPMO provides these funding requirements, by region, to the USAMEDCOM who, in turn, provides fenced dollars in each MTF's resource summary for PACS and teleradiology maintenance. On or about 1 October of each year, the maintenance chief at the MTF and/or region should forward a funded requisition to DSCP for the next year's maintenance service contract citing the fenced dollars in the resource summary for that fiscal year. DSCP then issues annual service contracts for the period 1 October to 30 September of the given year. Medical maintenance at each MTF is responsible for tracking performance against the contract and notifying the APPMO and DSCP of any breaches of uptime requirements or performance issues related to the annual service contract.

## 7-10. TELERADIOLOGY FUNCTIONALITY

a. Teleradiology is essentially distributed radiology and a means of electronically transmitting radiographic patient images and consultative text from one location to another. The original purpose of this capability was to provide primary interpretation capability for radiology exams acquired at MTFs without assigned radiologists and to provide additional radiologist support for those sites that are understaffed on a temporary or permanent basis. Current planning includes the exporting of radiological exams to remote sites for interpretation by underused radiologists, expanding the options for achieving maximum use of radiology personnel resources. For the purpose of image acquisition, specially configured teleradiology equipment may be used for this function or the same equipment at primary PACS sites may be used. The concept allows for central-reading MTFs (hubs) staffed by radiologists to read digital images transmitted via communications links from satellite MTFs, or when radiologists are deployed and the operations tempo is slow, transmitting home site workload to them on a global basis to keep their skills up and continue to provide support to their home MTFs.

b. Either commercial or government-provided communications links can be used for teleradiology as long as they are secure and available for clinical use. Sites can use a variety of secure communications links including dedicated terrestrial or satellite-based T-1, Integrated Services Digital Network circuits, fractional T-1 (dial-up switched-56K service), digital subscriber line (DSL), asymmetric digital subscriber line (ADSL), or cable modems where available. World-wide electronic

transmission, using lossless data compression and encryption, can be real time or scheduled for after normal working hours as needed to help get better utilization of limited communications circuits. The transmission method chosen and the bandwidth of the transmission path affect the throughput from the hub to the spoke. This must be understood in the planning of the teleradiology operational concept. Factors such as image size, volume, and acceptable turnaround time will help determine the bandwidth requirement of communications links chosen for support of teleradiology. Full bit depth of the original acquired image data set will be transmitted to permit full diagnostic capability at the receiving site. Thus, while transmission compression is permitted, it must be bit preserving (lossless) and fully reversible. Transmission of teleradiology images must be able to be performed in both real time and scheduled batch mode. Unattended batch-mode transmission would normally be used for routine clinical workload, and real-time immediate mode would be used to support the fast turnaround time requirements of emergency medicine. Teleradiology projects are already implemented in Europe, Korea, the Pacific Basin, Southwest Asia, the Balkans, Alaska, and the RMCs in CONUS. These projects use various Army and Air Force MTFs as the hubs.

c. An additional goal of the APPMO is to provide at-home, secure teleradiology capability, extending the radiologists' office into their home when they are on call. This will be accomplished using a locally-procured (government-furnished) PC-based workstation that is either transportable to the physician's home or via a modular upgrade that can be applied to an existing home PC. The at-home PC would typically receive radiological exams via a high-speed commercial internet service provider using DSL, ADSL, or cable modem communications technology. The radiologist would report findings back to the hospital CHCS directly or by an e-mail type program.

## 7-11. INFORMATION ASSURANCE

a. As the program management organization responsible for the acquisition and fielding of Radiology PACS for the Army, the APPMO has been tasked with developing an effective information assurance program for PACS and teleradiology systems. A key component of this program is the institution of new processes to report and respond to information assurance vulnerability alerts (IAVAs), as well as other threats to Army healthcare systems. Because most information assets covered under this program are classified as medical devices, and are, therefore, subject to regulation by the FDA, full participation and support by industry and the clinical users is required for the successful execution of the Army's radiology mission.

b. The Commanding General, USAMRMC, has been assigned as the designated approving authority for information assurance and security for centrally deployed PACS and teleradiology systems. The APPMO is working with the OTSG, USAMEDCOM, Information Systems Engineering Command, and MHS to help design and implement defense-in-depth, protected-enclave, network segment architectures to protect vulnerable FDA-approved medical devices and systems.

c. The APPMO is assisting in the coordination and compliance with PACS and related devices used for digital imaging in the Army MTF environment. With the recent commitment to security improvements and compliance on PACS and related devices, the APPMO acts as a liaison for incorporating these needs into improved processes. This allows the Army healthcare system to continue to provide mission critical patient care needs in a responsive and secure way.

d. As of the date of this SB, the following systems have completed the Defense Information Technology Security Certification and Accreditation Process (DITSCAP) and have a signed authority to operate (ATO):

The **Agfa Impax Version 4.5**
The **MedWeb Distributed Teleradiology Version 4.5**
The **General Electric Centricity 2.0**
The **Fuji Synapse Version 3.0**

The Agfa Impax Version 6.0 and General Electric Centricity 3.0 are pending and should be completed within the next few months. Other systems continue to be evaluated on a case-by-case basis. The new DOD Information Assurance Certification and Accreditation Process (DIACAP) is being evaluated and, at this time, it is unclear whether systems in the future will be centrally, regionally, or locally accredited. The required IAVAs and the USAMEDCOM guidance directives have not yet addressed the FDA issues for medical devices, which require vendor authorization prior to installing and applying any necessary patches, updates, or changes to these medical systems.

e. The APPMO mission is to provide PACS technology to all MTFs across the AMEDD by FY 2007. As sites are completed, their POC will be added to the APPMO list for correspondence. The APPMO, with assistance from the USAMMA, will complete and maintain a database of all the PACS and related medical devices, along with vendor contact information and status of compliance. This inventory is essential for ensuring compliance with all PACS equipment across the AMEDD.

f. The APPMO Information Assurance Manager is the central POC for PACS vendors and works with the Regional Information Assurance Managers and/or facility information assurance managers or designated POCs to facilitate vendor-product-site IAVA issue resolutions. The APPMO advises the regions on the status of updates and monitors vendor compliance schedules to encourage them to resolve IAVA non-compliance issues as quickly as possible. Regions will request extensions or waivers or both as necessary and the APPMO will also keep the USAMEDCOM information assurance program manager apprised of all security related issues with respect to IAVA and PACS/teleradiology security matters.

# CHAPTER 8. SUPPORTABILITY ANALYSIS

## 8-1. INTRODUCTION

a. A supportability analysis is conducted by the USAMMA Materiel Acquisition Directorate to describe the strategic roadmap of logistics supportability functions and the planning necessary to influence the system's design from conception to disposal. The support strategy summarizes the results of the logistics analysis, planning, and acquisition. All elements of logistics and related disciplines are included in the support strategy.

b. The support strategy addresses the responsibilities of the materiel developer and other organizations to maintain appropriate oversight of the fielded system. Oversight includes the identification of, and appropriate response to, performance, readiness, ownership cost, and support issues. Likewise, it includes an analysis of sustainment and technology insertion. Operational requirement floats (ORFs), contractor logistics support (CLS), forward-repair activities (FRAs),and original equipment manufacturer (OEM) maintenance are considered as part of the overall strategy.

## 8-2. SUPPORT STRATEGY

a. An acquisition strategy summary is included in the support strategy to identify the probable contract vehicle for procurement, basis of issue (BOI), estimated unit cost, total Army cost to the AMEDD BOI, and expected life of the item.

b. A clinical application summary is included for reference and to identify capabilities that are complimentary or overlapping.

c. The following logistics support elements are addressed:

(1) Maintenance planning
(2) Support and test equipment
(3) Training and training support
(4) Manpower and personnel
(5) Supply support
(6) Technical data
(7) Computer resources support
(8) Facilities
(9) Packaging, handling, storage and transportation
(10) Design interfaces

d. A materiel summary is included detailing cataloging, depot stock, and central management and procurement procedures.

## 8-3. LOGISTICS SUPPORT ELEMENTS

a. Maintenance Planning

(1) *Title 10 U.S.C. 2464*, a DOD policy, requires organic core maintenance capabilities. Such capabilities provide effective and timely response to surge demands,

ensure competitive capabilities, and sustain institutional expertise. Within statutory limitations, support concepts for new and modified systems shall maximize the use of contractor-provided, long-term, total lifecycle logistics support that combines depot-level maintenance for non-core-related workload along with wholesale and selected retail materiel management functions. Maximizing the use of contractor-provided support is not a mandate, merely a suggestion for consideration.

(2) Best value over the lifecycle of the system and use of existing contractor capabilities, particularly while the system is in production, shall be considered a key determinant in the development of the strategy. Long-term access to data is required for competitive sourcing of systems support throughout the lifecycle.

(3) The following items are addressed in the maintenance portion of the support strategy:

(a) Actions and support necessary to ensure the system attains the specified system readiness objectives with the minimum lifecycle cost
(b) Specific criteria for repair, including built-in test (BIT)
(c) Inspection procedures and tools
(d) 10/20 standards, including identification of specific maintenance tasks to be performed by the operator and maintainer
(e) Maintenance Allocation Charts
(f) TMDE requirements
(g) Medical ORF recommendations
(h) Repair and Spare Parts listing
(i) Man-hour requirements

b. Support and Test Equipment

(1) All equipment (mobile or fixed) required to support the operation and maintenance (O&M) of a materiel system is evaluated. This includes associated multi-use support items, ground-handling and maintenance equipment, tools, meteorology and calibration equipment, and manual/automatic test equipment (ATE).

(2) The selection of support and test equipment is developed based on the size, weight and complexity of the equipment, the likelihood of need, and the ability of the user to utilize it effectively.

(3) A system support package (SSP) will be defined and evaluated during testing for large, complex systems. This package consists of spare and repair parts, manuals, training package, special tools and TMDE, and unique software. The SSP is flexible and is tailored to system-peculiar requirements.

c. Training and Training Support

(1) The support strategy shall address and identify training initiatives that enhance the user and maintainer capabilities, improve readiness, or reduce individual and collective training costs. Planned training shall maximize the use of new learning techniques, simulation technology, embedded training, and multimedia training to reduce the costs.

(2) The USAMMA works with the training community to develop options for individual, collective, and joint training for personnel who will operate, maintain,

support, and provide training for the system. These options may include factory, resident, or new equipment training.

d. Manpower and Personnel

(1) The support strategy addresses any changes to manpower requirements or military occupational specialties (MOS) for system operators, maintainers, or support personnel.

(2) Actions to combine, modify, or establish new military occupational specialties or additional skill indicators, or issues relating to hard-to-fill occupations are identified.

(3) Human factors engineering (HFE) and man-machine interfaces are considered for both operator and maintainer personnel.

e. Supply Support

(1) The support strategy identifies the source of supply support, including support management functions, that maximizes service to the user, while minimizing cost.

(2) Organic supply sources of support are selected when they offer the best value. Particular attention is given to prime vendor and electronic catalog contracts for consumables and parts support.

f. Technical Data

(1) Technical data, scientific or technical information recorded in any form or medium (such as manuals, drawings, and computer software documentation), necessary to operate and maintain the system are identified and procured if economically feasible.

(2) Manufacturer's literature available in both portable document format (PDF) and interactive electronic technical manuals (IETMs). These resources are also available for the maintainer and may be ordered from USAMMA's website at **http://www.usamma.army.mil/**

g. Computer Resources Support

(1) Computer resources support involving facilities, hardware, software, documentation, manpower, and personnel needed to operate and support computer systems are documented in the support strategy. In addition, this analysis evaluates the BIT systems, all computer resources that interface with the test system and all off-equipment computer resources.

(2) Consideration of computer resources support ensures that computer resources are integrated, supportable, practical, and cost effective.

h. Facilities

(1) Impact on facilities is evaluated in the support strategy. These include permanent, semi-permanent, or temporary real property assets required to operate and support the materiel system, including conducting studies to define types of

facilities or facility improvements, locations, space needs, utilities, environmental requirements, real estate requirements, and equipment. Most medical equipment does not require changes to any facility.

(2) If new facilities are required or require modifications, military construction (MILCON) may be budgeted and coordinated dependent upon the size and cost and other system factors identified.

i. Packaging, Handling, Storage and Transportation

(1) Identification of the resources, processes, procedures, design considerations, and methods to ensure all system, equipment, and support items are preserved, packaged, handled, and transported are documented. This includes environmental considerations, equipment preservations requirements for short- and long-term storage, and transportability.

(2) The support strategy addresses the ability of the system to satisfy the rigors of transportation and storage utilizing testing. Adherence to applicable Military Standards (MIL-STDs), Army Regulations (ARs), and the American Society of Testing and Materials (ASTM) is documented. The following items are considered:

(a) System constraints (design specifications, item configuration, safety precautions)
(b) Geographic and environmental restrictions
(c) Special handling equipment and procedures
(d) Impact on spare or repair parts storage requirements
(e) Environmental impacts and constraints

j. Design Interfaces

Design interface is considered within the scope of operational readiness and support resource requirements. Consideration is given to standardization, interoperability, safety, security, environmental and hazardous materials, and legal requirements.

# CHAPTER 9. EQUIPMENT ITEMS SUPPORT AND CONSUMABLES HANDBOOKS

## 9-1. INTRODUCTION

The USAMMA Materiel Acquisition Directorate, has developed manuals that will aid units in the identification of the start-up and re-supply consumable packages that are required to operate medical items of equipment.

## 9-2. SUPPORT AND CONSUMABLES HANDBOOK COMPONENTS

The consumable handbooks (Figure 9-1) issued by the USAMMA contain the items by NSN, nomenclature, part number, quantity, unit of issue, unit price, total price, manufacturer, shelf life, refrigerated item, ship time, system description, and the USAMMA point of contact. The handbooks can be used to quickly identify shortage items at time of issue, during unit inventory, and to re-supply the consumables.


Figure 9-1. Cover of Handbooks

## 9-3. MEDICAL EQUIPMENT ITEMS SUPPORT AND CONSUMABLES HANDBOOKS ISSUED BY THE USAMMA AVAILABLE NOW WITH MORE TO FOLLOW

| Handbook Number | Device | NSN | Last Revised |
|---|---|---|---|
| | | | |
| | Book List of Equipment & NSNs | | 10 Jan 07 |
| UA 2256 | Ground Ambulance | 6545-01-496-4830 | 31 Jan 07 |
| UA 2257 | Air Ambulance | 6545-01-496-4855 | 31 Jan 07 |
| UA 2261 | Medical Patient Hold | 6545-01-496-4819 | 31 Jan 07 |
| UA 2267 | Forward Surgical Team | 6545-01-496-4834 | 31 Jan 07 |
| | | | |
| UA 4003/003A | Optical Fabrication Unit | 6545-01-525-7095 | 31 Jan 07 |
| UA 4714/174A | Dental Equipment Set | 6545-01-529-4218 | 31 Jan 07 |
| UA 4720/270A | Dental X-Ray | 6545-01-529-4443 | 31 Jan 07 |
| UA 4901/901A | Veterinary Equipment Set, Svc Fld | 6545-01-508-6972 | 31 Jan 07 |
| UA 4905/905A | VES, Detachment 50-Patient, Sm Animal | 6545-01-508-7015 | 31 Jan 07 |
| | | | |
| UA 4912/912A | VET SISS | 6545-01-539-9777 | 31 Jan 07 |
| UA 4913/913A | VES, Service Field | 6545-01-508-6996 | 31 Jan 07 |
| UA 4914/914A | Veterinary Set | 6545-01-508-7000 | 31 Jan 07 |
| UA 5257/257A | Air Ambulance, 2006 | 6545-01-534-6139 | 31 Jan 07 |
| UA 5267/267B | FST, 2006 | 6545-01-534-6592 | 31 Jan 07 |
| | | | |
| UA M305 | RAD | 6545-01-332-0137 | 31 Jan 07 |
| UA M432 | CT | 6545-01-459-1766 | 31 Jan 07 |
| UA N301 | OR | 6545-01-524-4460 | 30 Jan 07 |
| UA N302 | Central Medical Materiel Set | 6545-01-524-4464 | 31 Jan 07 |
| UA N303 | Laboratory General | 6545-01-524-6167 | 31 Jan 07 |
| | | | |
| UA N308 | Triage EMT Pre OP | 6545-01-527-7020 | 2 Feb 07 |
| UA N309 | Post-OP ICU Ward | 6545-01-527-7022 | 2 Feb 07 |
| UA N310 | Intermediate Care | 6545-01-527-7613 | 2 Feb 07 |
| UA N311 | Minimal Care Ward | 6545-01-528-5018 | 2 Feb 07 |
| UA N315 | MMS Eye Exam | 6545-01-505-2715 | 5 Mar 07 |
| | | | |
| UA N334 | MMS X-Ray Low cap | 6545-01-529-3904 | 2 Feb 07 |
| UA N403 | Micro Laboratory, General | 6545-01-505-2714 | 5 Feb 07 |
| UA N503 | Laboratory, General 84-bed | 6545-01-524-6157 | 31 Jan 07 |
| UA N703 | Laboratory, General 164-bed | 6545-01-524-6153 | 31 Jan 07 |
| | | | |

## 9-4. OBTAINING THE CONSUMABLES HANDBOOKS

The current versions of the consumables handbooks are available on the USAMMA website at **http://www.usamma.army.mil.** At the tool bar located below the header page, click on “Reference.” A drop-down menu will appear; click on the “Equipment Handbooks.” All available handbooks will be listed; select the desired handbook. The first entry “Book List of Equipment & NSNs” notes each equipment item currently referenced in the handbooks and the handbook(s) in which it is located.

# CHAPTER 10. UNIT ASSEMBLAGE (UA) INFORMATION

## 10-1. UPDATING OF UAs

a. UAs (known as medical sets, kits, and outfits [SKOs]), are clinically reviewed and revised by the Directorate of Combat and Doctrine Development, AMEDDC&S, Fort Sam Houston, TX, in coordination with the USAMMA. The UAs contain multiple components that make up the set and these lists of components are also known as material BOMs. The revised UAs are published after the new versions are approved and identified with a new NSN assigned to the set for procurement and fielding purposes.

b. Once the new versions for the non-hospital sets are approved, they are published on the USAMMA web pages **http://www.usamma.army.mil**. UA information can be obtained by clicking on the "Medical Unit Assemblage" box on the homepage of the website. The set component data contains the most current catalog data for each UA as well as any maintenance changes to the set, such as deleted or replacement NSNs.

c. The new versions are unique to the year they are approved and the year is identified in the set nomenclature. While the line item number (LIN) for a particular set should remain the same from year to year, the NSN of the set changes each time the UA is reviewed. However, maintenance changes, such as replacing a non-procurable item with a procurable item, occur daily. For the most accurate UA results, search for the UA listing using the NSN listed on the unit's property book listing. The AR 40-61, Chapter 10, Section II, identifies that medical equipment sets, also known as level 1 and 2 non-hospital sets, with a numeric or alpha-numeric UA code (UAC). Due to the possibility of the UAC changing annually, as well as the NSN of the new version of the set, units need to identify the sets they are authorized by the LIN, NSN, and UAC. The set nomenclature also displays the year of the update.

d. The hospital sets, known as the Deployable Medical Systems (DEPMEDS) sets, are also published on the USAMMA website and the units must maintain these sets based on the documentation the USAMMA provided them during their fielding of the hospital sets (reference AR 40-61, Chapter 10, Section III). These hospital sets, known as level 3 sets, are identified with a four character UA number, with the first character of the UA code being an alpha character. The Combat Support Hospitals (CSHs) are not required to update their hospital sets until the USAMMA upgrades them with a new version, identified with a new NSN and UAC, based on a USAMMA-established fielding schedule.

e. For UA listings not available on the web or for those activities without web access, you may request electronic copies of the UA listings. A request should be submitted in writing identifying the set NSN and the LIN to the address shown below. Telephone requests may also be made to the USAMMA Materiel Acquisition Directorate, Acquisition Support Division at DSN 343-4309/4315 or commercial 301 619-4309/4315.

Commander, USAMMA
ATTN: MCMR-MMO-AS
1423 Sultan Drive, Suite 100
Fort Detrick MD 21702-5001

## 10-2. CHANGE TO UA CODES FOR NON-HOSPITAL SETS

a. A change to the numbering convention for the non-hospitals sets was initiated in January 2007. This change is in support of the requirement that a new UAC is assigned whenever a set is clinically reviewed by the AMEDD Center and School Combat Developer and the USAMMA.

b. The USAMMA Materiel Acquisition Directorate has coordinated this UAC change with the Combat Developers at Directorate of Combat and Doctrine Development (DCDD), Fort Sam Houston, TX. The UA code remains a 4-digit code, but has an alpha character in the last position of the UAC, i.e., the current version of 5256 will become 256A.

c. This change to the new UA codes was effective 1 February 2007. An announcement identifying the UACs that changed is published on the USAMMA website as a “Whats New” article in the section dedicated to “Medical Unit Assemblages.” This change is to make it easier to maintain multiple versions of the same LINed sets at the same time. When requesting a supply catalog or updated listing to be sent to your unit, continue to reference your LIN and set NIIN. The codes below are used only to reference the set listings on the USAMMA web page and in the cataloging data.

d. No changes to authorization documents are required since authorizations use the LIN and NIIN as documentation. A list of the new UA codes is provided for your information:

**TABLE 10-1. NEW UA CODES**

| Old UA Code | New UA Code | NIIN | Nomenclature | LIN |
|---|---|---|---|---|
| 1106 | 106A | 00-949-4000 | MED INSTRUMENT AND SUPPLY SET 1999 | M31506 |
| 1211 | 211A | 01-449-7010 | MES ENDEMIC DISEASE, MICROBIOLOGY (AML) | M22214 |
| 1212 | 212A | 01-449-7013 | MES ENDEMIC DISEASE, VETERINARY | M37839 |
| 1213 | 213A | 01-449-7014 | MES LAB GEN FIELD AREA MED LAB | M43740 |
| 1214 | 214A | 01-449-7015 | MES ANIMAL PATHOLOGY | M33322 |
| | | | | |
| 1215 | 215A | 01-449-7016 | MES ENTIMOLOGICAL LAB | M37771 |
| 1216 | 216A | 01-449-7018 | MES AREA MED LAB INDUSTRIAL HYGI | M22714 |
| 1217 | 217A | 01-449-7023 | MES ENVIRONMENTAL LAB BIOCHEMIST | M25430 |
| 1218 | 218A | 01-449-7026 | MES ENVIRONMENTAL HEALTH | M25180 |
| 1219 | 219A | 01-449-7028 | MES LABROATORY RADIOLOGICAL | M29659 |

| Old UA Code | New UA Code | NIIN | Nomenclature | LIN |
|---|---|---|---|---|
| | | | | |
| 1220 | 220A | 01-449-7058 | MES BIOLOGICAL WARFARE | M23718 |
| 1221 | 221A | 01-449-7061 | MES MED BIOCHEMISTRY AND CHEMICAL | M23468 |
| 1225 | 225A | 01-480-6913 | WATER DIST & WASTE WATER TREAT | W53373 |
| 1226 | 226A | 01-507-2140 | WATER DISTRIBUTION CONNECTION SET | W53623 |
| 1245 | 245A | 01-532-3674 | MES COMBAT LIFESAVER VERSION 2005 | N/A |
| | | | | |
| 1308 | 308A | 008646260 | MRS FORWARD SURGICAL TEAM | N/A |
| 1327 | 327A | 01-254-4124 | MRS TRAUMA FIELD | N/A |
| 1328 | 328A | 01-254-4129 | MRS SICK CALL | N/A |
| 1329 | 329A | 01-254-4125 | MEDICAL RESUPPLY | N/A |
| 1330 | 330A | 01-254-4121 | MED RESUP X-RAY FLD | N/A |
| | | | | |
| 1331 | 331A | 01-254-4128 | MEDICAL RESUPPLY | N/A |
| 1332 | 332A | 01-254-4122 | DENTAL RESUPPLY | N/A |
| 1500 | 500A | 01-510-5870 | MES SOF PHYSICAL THERAPY | N/A |
| 1623 | 623A | 01-453-5658 | MES HUMANITARIAN AUGM | N/A |
| 1625 | 625A | 01-542-7038 | PEDIATRIC AUGMENTATION | N/A |
| | | | | |
| 1624 | 624A | 01-543-2366 | HUMANITARIAN SURGICAL AUGMENTATION | N/A |
| 3107 | 107A | 01-507-4313 | MES, WATER QUALITY ANALYSIS 2003 | Y36849 |
| 3109 | 109A | 01-521-6669 | MES IND HYG FLD 2004 | M28909 |
| 3207 | 207A | 01-521-6670 | MED EQ SE EPIDEM SER | M24993 |
| 3222 | 222A | 01-500-1723 | WATER DISTRIB 44BED | NONE |
| | | | | |
| 3223 | 223A | 01-500-1690 | WASTEWATER MGT 44BED | NONE |
| 3249 | 249A | 01-518-7565 | MES CHEM AGENT/2003 | M23673 |
| 3253 | 253A | 01-521-6671 | MES CLINICIAL PSYCHOLOGY FIELD | E37001 |
| 3258 | 258A | 01-518-7568 | MES CHEM PATIENT/2003 | M25865 |
| 3263 | 263A | 01-499-2329 | MES LAB FLD LTWT/2003 | M29159 |
| | | | | |
| 3267 | 267A | 01-502-3316 | MES FORWARD SURGICAL TEAM- 2003 | M45375 |
| 3300 | 300A | 01-492-1739 | RODENT SURV ST 1 2003 | S10157 |
| 3504 | 504A | 01-518-2964 | MES BLD PROCESS-2003 | M23423 |
| 4003 | 003A | 01-525-7095 | OPTICAL FABRICATION UNIT 2005 | N22073 |
| 4006 | 006A | 01-531-1942 | OES MULIVISION AUGMENTATION 2003 | P47705 |
| | | | | |

| Old UA Code | New UA Code | NIIN | Nomenclature | LIN |
|---|---|---|---|---|
| | | | | |
| 4262 | 262A | 01-521-6673 | MES, X-RAY FIELD LTWT 2005 | M45613 |
| 4268 | 268A | 01-527-8010 | MES SP OPS FORCE 2005 | M29999 |
| 4301 | 301A | 01-527-8013 | MES PRIMARY GYN CARE AUG | M29701 |
| 4324 | 324A | 01-531-1946 | OPTICAL EQUIPMENT SET, FIELD COMBAT | N23712 |
| 4714 | 174A | 01-529-4218 | DES COMPREHENS DEN2005 | D43802 |
| | | | | |
| 4719 | 179A | 01-529-4225 | DES, DENTAL HYG 2005 | D39228 |
| 4720 | 270A | 01-529-4443 | DES, XRAY FLD 2005 | D39478 |
| 4721 | 271A | 01-529-4440 | DES PROSTHETICS 2005 | D95617 |
| 4723 | 273A | 01-529-4452 | DENTAL EQUIPMENT SET MAIN 2005 | D95867 |
| 4724 | 274A | 01-529-4449 | DES, DENTAL SUPLY 2005 | D95343 |
| | | | | |
| 4727 | 277A | 01-529-4430 | DES PERIODONTICS 2005 | D95730 |
| 4728 | 278A | 01-529-5182 | DES ENTODONTICS 2005 | D43641 |
| 4729 | 279A | 01-529-4448 | DSS EMERGENCY DENTAL REPAIR, 2005 | F95778 |
| 4901 | 901A | 01-508-6972 | VES SERVICE FIELD-2005 | M30340 |
| *4902 | 902A | 01-508-6998 | VES, LARGE ANIMAL 2005 | N/A |
| | | | | |
| 4905 | 905A | 01-508-7015 | VES, 50 PAT SMALL 2005 | M30136 |
| 4910 | 910A | 01-539-9775 | VES, FOOD INSPECTION -2005 | V02063 |
| 4911 | 911A | 01-508-6989 | VES FOOD INSPECT INDIV-2005 | H84228 |
| 4912 | 912A | 01-539-9777 | VES SURGICAL INST2005 | U65754 |
| 4913 | 913A | 01-508-6996 | VES, FIELD MICROBIOLOGY DIAGNOSTIC KIT | Z64440 |
| | | | | |
| 4914 | 914A | 01-508-7000 | VES, FOOD TESTING | Z63873 |
| 4920 | 920A | 01-539-9779 | ANIMAL DISEASE DIAGNOSTIE & POSTMORTEM | V02346 |
| 4921 | 921A | 01-539-9771 | VES, LARGE ANIMAL FIELD | M30067 |
| 5246 | 246A | 01-534-6145 | MES SISS/2002 | U65480 |
| 5256 | 256A | 01-534-6129 | MES GROUND AMBUL-2006 | M26413 |
| | | | | |
| 5257 | 257A | 01-534-6139 | MES AIR AMBUL-2006 | M26413 |
| 5261 | 261A | 01-535-7061 | MES PATIENT HOLDING SQUAD FLD LIGHTWEIGHT 2006 | M29633 |
| 5264 | 264A | 01-534-6135 | MES TRAUMA FLD | M30156 |
| 5265 | 265A | 01-534-6137 | MES SICK CALL FLD | M30156 |
| 6412 | 412A | 01-540-0971 | MES PHYSICAL THERAPY-2006 | N/A |
| | | | | |

| Old UA Code | New UA Code | NIIN | Nomenclature | LIN |
|---|---|---|---|---|
| 5211 | 211B | 01-540-6695 | MES ENDEMIC DISEASE MICRO 2006 | M22214 |
| 5212 | 212B | 01-540-5858 | MES ENDEMIC DISEASE VET 2006 | M37839 |
| 5213 | 213B | 01-540-6701 | MES AML LAB GEN FLD 2006 | M43740 |
| 5214 | 214B | 01-540-5791 | MES ANIMAL PATHOLOGY 2006 | M33322 |
| 5215 | 215B | 01-540-6720 | MES ENTOMOLOGIC LAB 2006 | M37771 |
| | | | | |
| 5216 | 216B | 01-540-6773 | MES AREA MED LAB HYG 2006 | M22714 |
| 5217 | 217B | 01-540-6709 | MES ENVIRON LAB BIO 2006 | M25430 |
| 5218 | 218B | 01-540-6715 | MES ENVIRON HEALTH 2006 | M25180 |
| 5219 | 219B | 01-540-6780 | MES LAB RADIOLOGICAL 2006 | M29659 |
| 5220 | 220B | 01-540-6799 | MES BIO WARFARE MICRO 2006 | M23718 |
| | | | | |
| 5221 | 221B | 01-540-6800 | MES BIOCHEM &CHEM WARFARE2006 | M23468 |
| 5249 | 249B | 01-537-5022 | MES CHEM AGENT PATIENT 2006 | M23673 |
| 5258 | 258B | 01-537-5019 | MES CHEM AGT PATIENT DECON 2006 | M25865 |
| 5263 | 263B | 01-538-5842 | MES LAB FIELD LTWT 2006 | M29159 |
| 5267 | 267B | 01-534-6592 | MES FORWARD SURGICAL TEAM - 72007 | M45375 |
| | | | | |

## 10-3. INSTRUCTIONS FOR OBTAINING SCs AND SBs

a. The USAMMA is the proponent for publishing the medical supply catalogs; however, requests for printed medical SCs 5180-8 and 6545-8 series and SBs (SB 8-75 series) are not filled from or by the USAMMA.

b. If your activity has a need for medical SCs or SBs, you will need to contact the U.S. Army Publishing Directorate (USAPD). Effective July 1997, hardcopy requests are no longer accepted through the DA pamphlet series. You must have a valid account number and use the website to order publications. Your requirements must be submitted through the electronic method by accessing the USAPD website: **www.apd.army.mil**.

c. For further assistance in using the system or services contact USAPD Customer Service at the Distribution Operations Facility, St. Louis MO; DSN 892-0900, extension 4 or commercial 314-592-0900, extension 4.

d. If you need to check the status of your order or are having problems with pending orders, contact USAPD Customer Service personnel at the telephone number in paragraph c, above.

## 10-4. MAJOR MEDICAL ASSEMBLAGES/SC NUMBER CROSS REFERENCE LISTING

A listing of the current Army assemblages is provided as Appendix B in this SB. The title of the listing is “Major Medical Assemblages in National Stock Number (NSN) Sequence”. This listing is maintained and updated as new sets are established or old sets are no longer authorized.

## 10-5. MEDICAL HOSPITAL SET COMPONENT LISTINGS AND FUNCTIONAL DESCRIPTIONS NOW AVAILABLE ON USAMMA WEBSITE

a. USAMMA has added the display and download capability of the Medical Materiel Hospital Sets (also, known as DEPMEDS) to the USAMMA website. These component listings reflect the most current version for the hospital sets, the sets with an “N” in the first position of the UAC. Activities authorized the hospital sets will follow the same guidance provided for the non-hospital sets. The users will manage their sets based on the NSN they were fielded. Archived versions, the sets with an “M” in the first position of the UAC, are also provided on the webpage.

b. Another enhancement to our webpage for sets is the addition of the functional descriptions to assist users of the CSH. The functional description is a valuable document that identifies the mission capability of the set by LIN.

c. This information can be displayed by clicking on the graphic (LIN description) legend button that appears on the set NSN when you access the individual CSH component listings by either set NSN or LIN. The webpage also provides a dropdown list by LIN for the functional descriptions. They can be opened and viewed through the complete dropdown list provided under the “Functional Descriptions” search link (option 5) that appears at the bottom of the second screen for medical unit assemblage queries.

## 10-6. MEDICAL EQUIPMENT/INSTRUMENT ILLUSTRATED CATALOG ON CD

a. The Materiel Acquisition Directorate is responsible for identifying illustrations for newly developed medical items that are included in medical UAs. These illustrations help the AMEDD community to identify medical instrument/equipment components within their unit’s UA inventories.

b. The illustration library is maintained within the USAMMA and provided for publication to the following sites or organizations:

(1) The USAMMA MEDSILS portion of our website (see appropriate block on the USAMMA website **www.usamma.army.mil**). Illustrated items on MEDSILS are available to view when an icon appears next to the NSN on the screen. Simply click on the icon to view the image.

(2) The Defense Logistics Information System (DLIS) for publication on the Defense Logistics Service Center’s (DLSC) UDR CD-ROM.

(3) The USAMMA website when searching the “Medical Unit Assemblage” option, through the UA component query. For any UA query that results in a component list, a yellow legend button appears beside any illustrated component. The illustration will open just by clicking the yellow legend button.

c. The illustrations are captured in a variety of forms including:

(1) Sketch/line drawing
(2) Black and white photos
(3) Color photos

## 10-7. ON-LINE CAPABILITY TO REQUEST NSN ASSIGNMENT

a. The request for NSN assignment is now processed through the Defense Medical Logistics Item Identification System (DMLIIS) and serves medical readiness needs by providing the following:

(1) Automated workflow and collaboration among the Services (Army, Navy, Air Force, and Marine Corps), Defense Standardization Board (DMSB), DSCP, and DLIS, in the creation of new item medical NSN, joint control number (JCN), and non-Medical NSN requests.

(2) NSN creation and maintenance requests enter the system through a secure, authenticated, web-based application. The DMLIIS application is utilized by personnel located throughout the world who are affiliated with field and service medical logistics, military services, the DMSB, and DSCP. A new item action may involve NSN or JCN. Once created, the item will traverse through a defined workflow. Collaboration between defined, interested parties, is fostered throughout the process. Once the item reaches the last reviewer within DMLIIS, it is queued and sent forward; if applicable, to external source authority. The resulting information will complete the item life cycle (or remand the item for additional processing back in DMLIIS). The users will also be able to search the system, ascribe service interest to other service items, and generate report metrics/status of requests.

(3) Automated collaboration between those same entities for maintenance, updating, and when required, termination and deletion of NSN data in FLIS, which propagates the corrected NSN information to downstream systems, including the MEDSILS, Medical Electronic Customer Assistance (MECA), and the Universal Data Repository (UDR), Business System Modernization (BSM), and commercial and government entity (CAGE) Central Contractor Registration (CCR).

b. DMLIIS replaces three legacy applications used by the Services, DMSB, and DSCP to create and maintain medical logistics item identification elements such as NSNs and JCNs.

c. Before an item is submitted for NSN assignment, it must be researched in one or more of the following: UDR on CD-ROM; FED LOG on CD-ROM; and DLIS on-line.

d. Provide all information you have on the item in the appropriate sections of the form. Please reference the assigned request number on the literature that you send. Mandatory information is:

- Item name
- Item description
- Source of supply - name, address, and phone number

- Part number, national drug code (NDC), trade name, or universal product number (UPN)
- Unit of issue
- Unit price
- Weight and cube
- Airworthiness
- Product literature or supporting documentation (how it will be sent)
- A vendor's website is preferred — provide the URL on the form
- You may also send literature by:

FAX TO: DSN 343-2938 or commercial 301-619-2938
MAIL TO: USAMMA, ATTN: MCMR-MMO-A
1423 Sultan Drive, Suite 100
Fort Detrick MD 21702-5001

Preferred but not mandatory information is:

- Common name
- UA (unit assemblage that the item will be a component of or associated with)

e. Click on "Products and Services" and select "DOD Standard Item Request/NSN Assignment." Review the narrative instruction data first and then click on the link at the bottom of the page and that will take you to DMMOnline. DMMOnline is a suite of applications managed by DSCP.

f. If you are a new requester, you can register by clicking on the following link **https://dmmonline.dscp.dla.mil/Registration/sitelogin.aspx** and select "New User Registration" and fill out the required information. Upon completion of registration please allow 3-5 business days for validation and approval.

g. If you have any questions about submitting your request, please contact the service analysts at DSN 343-4312/4321/4426 or commercial 301-619-4312/4321/4426.

## 10-8. RECOMMENDING IMPROVEMENTS AND REPORTING ERRORS FOR MEDICAL SKOs

a. The DCDD, AMEDDC&S is responsible for the requirements of medical UAs. They are also responsible for the clinical review and update of these medical UAs.

b. As stated in *AR 40-61*, the USAMMA is responsible for the maintenance and management of the UAs, as well as responsible for the distribution and publication of this data. One of the USAMMA UA publications for medical sets is the official DA *SC 6545-8 Series*, Components List/Hand Receipt. As stated in the SC, any recommendations or suggestions for improvement to the components of sets should be provided in writing on DA Form 2028 (Recommended Changes to Publications and Blank Forms).

c. To make suggestions or report problems, the DA Form 2028 should be completed and mailed to:

Commandant
AMEDD Center & School
Directorate of Combat Doctrine Development
ATTN: HSMC-FCM-M
Fort Sam Houston TX 78234-6100

## 10-9. WEB-ACCESSIBLE UA PRODUCTS

a. The UA products listed below are available on the USAMMA website at:
**www.usamma.army.mil**

b. Select the "Medical Unit Assemblages" block on the initial USAMMA homepage screen. To connect to the UA query options, select the "Click Here to view database" link. Both Army divisional sets and hospital sets are currently available through our website. On the initial screen for UAs, there are four search options available to obtain information:

(1) UAs – Searches the UAs (sets). After the UA is found, it can be exploded to view components. The menu option for UAs contains five search criteria unique to the set:

- UA Code – Searches UA code
- NSN – Searches NSN of the set
- LIN – Searches LIN of the set
- SUPPLY CATALOG CODE (SCC) – Searches SCC
- NOMENCLATURE – Searches the specific name of the set

(2) Components – Searches for all sets that contain this component. You may then navigate to the UA, which may then be selected and exploded, into all its components. The menu options for "Components" contain six search criteria:

- NSN – Searches the NSN to find a list of all UAs that contain the specific component
- Therapeutic Index Number (TIN) – Searches TIN to find a list of all components with the specific TIN
- LIN – Searches LIN to find a list of all components with specific LIN
- CAGE code number – Searches to find a list of all components with the specific CAGE code/manufacturer number
- NDC – Searches to find a list of all components with the specific NDC
- NOMENCLATURE – Searches to find a list of all components with specific nomenclature

(3) Relationships – Searches for "W" to "J" or "J" to "W" relationships. If you enter a "W" NSN, all of the associated "Js" will be returned. Search options for "Relationships" identifies the AAC "W" & "J" NSNs.

Enter a search by an AAC "W" NSN to view "J" NSN (associated with "W" NSN).
Enter a search by an AAC "J" NSN to view "W" NSN (associated with "J" NSN).

(4) Consumable/Support Items Report - This query provides a list of all medical equipment that has been reviewed by the USAMMA. The USAMMA has identified consumable/support items that are needed to keep the equipment functional. This report is a resource to customers who may have the equipment on hand and need to be able to

requisition consumable NSNs in order for the equipment to continue to be operational. This information is provided to customers in an EXCEL format that can be downloaded.

c. Additional detailed UA background and instructions are provided for your guidance in the “Help” link under the following paragraphs:

- Web System Tutorial/Query Instructions
- Medical Service Unique UAs
- Current Medical Unit Assemblage Listings
- Download UA Information to PC
- Shelf Life Codes
- Instructions for Obtaining SCs and SBs
- Phrase Code Information
- Therapeutic Classification – American Hospital Formulary Service
- Read-me Instructional File Distributed with UAs on Diskette

d. The e-mail link will address us with your feedback or any assistance you may need.

## 10-10. CONSUMABLE/SUPPORT ITEMS FOR MEDICAL EQUIPMENT UNIQUE TO A SET ARE IDENTIFIED IN SECTION IV IN THE PUBLISHED UA LISTINGS

a. Medical equipment items that may be a component of a medical set, kit, or outfit or may be separately authorized for use with sets may require consumable/ support items to keep the equipment operational. Examples of consumable items include paper, fluid, or tubing.

b. The USAMMA maintains a cross-reference of medical equipment to their consumable/support items as they are identified through specific manufacturers of the equipment. This information is make/model specific and is continually being updated based on research and communication with the manufacturers, as consumable/support items are manufacturer specific.

c. Section IV of the UA reports reflects the consumable/support items identified to the equipment NSN. This report is available on the USAMMA website and is downloadable. Currently, Section IV is provided when a UA is downloaded from the webpage to either the PC hard drive or to a diskette. The report can either be printed or opened onto the screen via “NOTEPAD” or “WORDPAD.” Only UA reports for non-hospital sets are available on the USAMMA webpage.

d. The consumable/support items are also available on a dropdown view of the equipment through the “MEDSILS” portion of the USAMMA webpage when the medical equipment NSN is queried. The query needs to be submitted by the NIIN; the NIIN is the last nine digits of the NSN.

## CHAPTER 11. DATA MANAGEMENT — INFORMATION AND PRODUCTS

### 11-1. AACs OF "W" & "J" AND HOW THEY ARE USED

a. AACs indicate how and under what restrictions an item is to be acquired. The AAC will reflect applications of three basic methods:

(1) Requisition
(2) By fabrication or assembly
(3) By local purchase

See *Department of Defense (DOD) 4100.32-M*, Volume 10.

b. AAC 'W' and 'J' Relationships

(1) NSNs with an AAC 'W' are assigned to generic end items of equipment that are initially identified for use. This process provides a method to develop authorization documents, e.g., MTOE and UA reports, and for procurement planning (development of essential characteristics). AAC "Ws" are rarely being used in UAs, but may be inserted for new technology requirements where a specific make and model have yet to be selected. NOTE: On-hand stocks should never be recorded against AAC "W" NSNs.

(2) As manufacturers are identified, contracts awarded, and items developed, each contracted item is assigned a new NSN with AAC "J." The new AAC "J" item is linked to the originally described AAC "W" item with a phrase code that designates the relationship between the NSNs. Data plates and container markings reflect the specific NSN for that manufacturer.

(3) DOD Army Logistics Systems/publications further identify AAC "W/J" relationships through the use of phrase codes "3" and "S":
The phrase code "3" is assigned to the actual item manufactured (AAC "J")
The phrase code "S" is assigned to the generic NSN (AAC "W")

(4) *AR 40-61* (28 January 2005), Chapter 5, Section IV, paragraph 5-23, provides additional requisitioning instructions and information on provisioned medical equipment. Regular updates to *SB 700-20* (Army Adopted/Other Items Selected for Authorization / List of Reportable Items) and the AMDF reflect specific and current items of production data (AAC "J") as authorized substitutes for the generic end item (AAC "W") reflected on the requisitioner's authorization document.

(5) An NSN assigned an AAC "J" is an integrated materiel manager (IMM)/service centrally managed item but not a stocked item. Procurement will be initiated only after receipt of a requisition.

| CODE | TERM AND EXPLANATION |
|---|---|
| **W** | RESTRICTED REQUISITIONING - SPECIAL INSTRUCTIONS APPLY NON-STOCKED ITEM |
| **J** | NOT STOCKED, CENTRALLY PROCURED NON-STOCKED ITEMS |

## 11-2. AAC RESOURCES AVAILABLE

a. The Defense Logistics Agency, *Customer Assistance Handbook* is an excellent source of information and explanation of the supply codes.

Website: DLA - **http://www.supply.dla.mil**

b. AAC "W" & "J" listings are available via the USAMMA website in the MEDSILS database, located and accessible by using the address:

WEB Site: USAMMA - **http://www.usamma.army.mil/medsils.cfm**

c. For additional information on AAC "W" & "J" relationships, please contact the USAMMA, ATTN: MCMR-MMO-AS, Fort Detrick MD 21702-5001; DSN 343-4060 or commercial 301-619-4060.

## 11-3. CONTROLLED SUBSTANCES - NSNs

a. The list of NSNs shown in Appendix C are considered to be controlled substances as defined by the Administrator, Drug Enforcement Administration (DEA), Department of Justice, as defined in the Controlled Substance Act of 1970. These NSNs also appear on the Defense Logistics Agency Controlled Substances Table.

b. NSNs containing the controlled inventory item code (CIIC) of "Q" (to include notes code of "Q") are determined to be a drug or other substance designated as a schedule III, IV, or V item, in accordance with the Controlled Substance Act of 1970, and includes other sensitive items requiring limited access storage.

c. Those NSNs with CIIC "R" (to include notes code of "R") have been determined to be a precious metal, a drug, or other controlled substance designated as a schedule II or III item, in accordance with the Controlled Substance Act of 1970, and includes other selected sensitive items requiring storage in a vault or safe.

d. For additional information on controlled substances, please contact the

USAMMA
ATTN: MCMR-MMO-AS
1423 Sultan Drive, Suite 100
Fort Detrick MD 21702-5001
Telephone DSN 343-4323, commercial 301-619-4323

## 11-4. FED LOG ON CD

a. The FED LOG system is menu-driven and capable of operating on a LAN. There are three levels of help available to the user:

(1) System help,
(2) Screen level help, and
(3) Coded data help.

It is produced by the DLIS from data resident in the FLIS. FED LOG contains management, reference, descriptive, freight, and manufacturer supply data for all U.S.-assigned NSNs.

b. FED LOG has a user's manual with help features on the disk. A startup guide is distributed with your first copy of FED LOG to help with installation, troubleshooting, and includes customer support information.

c. FLIS is searched by entering one or a combination of the following:

(1) Part number
(2) CAGE code
(3) NIIN
(4) NSN
(5) Permanent system control number
(6) Supplier name or
(7) Item name

d. The Army system can be searched by any combination of the FLIS and/or management control number (MCN) and/or LIN. The following list shows the options.

- You can search by characteristics data with the characteristics search disk.
- A wildcard search is available on most of the above searches with the first three characters and an asterisk (*).

e. The Logistics Data Management Center in Huntsville, AL, maintains the distribution list for all the Army. To obtain disks 1 through 4, please contact:

Commander
USAMC Logistics Support Activity
ATTN: AMXLS-MLA
Building 3623
Redstone Arsenal AL 35898-7466
Telephone: DSN 645-0594, commercial 256-955-0594

f. Disk 5 (Characteristics Search), Disk 6 (Drawings), and direct vendor delivery (DVD) may be obtained from DLIS at DSN 932-4459, commercial 616-961-4459.

## 11-5. MEDSILS

a. MEDSILS is an integrated logistics database that supports the medical logistics data for the Air Force, Army, Navy, and the DMSB. It supports the SICA function through the generation, receipt, transmission, validation, storage, control, and dissemination of logistics data. MEDSILS is a central source for medical and non-medical logistics data required to support the Services' healthcare missions.

b. The USAMMA is the executive agent for MEDSILS, which is used by all Services. MEDSILS data is distributed daily to the FLIS and is disseminated worldwide. MEDSILS is also available on the web for cataloging queries. The web address is:

**http://www.usamma.army.mil/apps/qbca_medsils/index.htm**

## 11-6. MILITARY ITEM DISPOSAL INSTRUCTIONS (MIDI)/MILITARY ENVIRONMENTAL INFORMATION SOURCE (MEIS)

a. The MIDI/MEIS CD-ROM is provided to aid in the disposal of outdated and excess items used within the DOD. The CD-ROM replaces the "U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) *Technical Guide No. 126, Waste Disposal Instructions*."

b. In addition to the MIDI database, which provides the method of destruction, the CD-ROM also contains:

- An on-line help
- USACHPPM information papers and fact sheets
- *TG146* (pentachlorophenol-treated materials)
- Pertinent regulations (40 and 49 code of federal regulations)
- P2 initiatives
- Proact fact sheets

c. Disposal information may also be accessed through the internet at:

**http://chppm-www.apgea.army.mil/newmidi/**

You may query the live database by noun, synonym, or NSN.

d. To request disposal guidance on items not yet in MIDI, or to be added to distribution for the MIDI, use the appropriate contacts in the following list.

| **FOR GUIDANCE**: | **FOR DISTRIBUTION**: |
|---|---|
| MIDI PROJECT OFFICER<br>U.S. Army Center for Health Promotion & Preventive Medicine<br>Aberdeen Proving Ground MD 21010-5422<br>DSN 584-3652, commercial 410-436-3652<br>or 1-800-276-MIDI / FAX 410-436-5237 | Spawar System Center, Charleston, Norfolk Office (SSC CHAS NORF OFC)<br>DSN 565-9191,<br>commercial 757-445-9191<br>FAX 757-444-2835 |

e. This CD-ROM product is provided on an annual basis. There is no charge for this service to DOD agencies.

## 11-7. *SB 700-20* LINs

a. The *SB 700-20* (Army Adopted Items of Materiel and List of Reportable Items) is a system that reflects LIN assignments of items that are required in authorization documents. The MMO-A has the responsibility for obtaining LIN assignments for medical equipment that is authorized in the TOE. Normally, these items have high-visibility, high-dollar value, and must be accounted for on the property book. The *SB 700-20 Records Listing* may be viewed on the website at the address shown below:

**http://www.usamma.army.mil/apps/nam_sb70020_listings/nam_search.cfm**

b. The information provided consists of the current file of medical and non-medical LINs listed in MEDSILS. Search methods consist of viewing by NIIN, LIN, Routing Identifier Code (RIC), view all *SB 700-20* records listing by LIN, and view all *SB 700-20* records by NIIN. By clicking on the associated LIN NSN highlighted in blue, it will take you into the MEDSILS.

c. The *SB 700-20* Records Listing is updated twice a year in June and December.

## 11-8. UDR

a. The UDR is a Tri-service CD product that is updated monthly by DLIS and distributed to recipients requiring use of the data. UDR data updates the Army Theater Army Medical Management Information System (TAMMIS), the Navy Authorized Medical Allowance List/Authorized Dental Allowance, Medical Logistics, and the Air Force Master Data List.

b. The UDR provides the user with a choice of search options to include pharmaceutical, medical, D-Day searches, services, defense blanket purchase agreements (DBPAs), DEPMEDS, Army master data file (AMDF), quality assurance, download and images, clinical guidelines and treatment briefs, DSCP's prime vendor distribution and pricing agreements.

c. The UDR will operate using a Windows application and consists of following three basic functions:

(1) The UA data for Army,
(2) Requisitioning capability, and
(3) CD-ROM downloading capability for update of TAMMIS and Medical Assemblages Management (MEDASM)

d. Army hospital sets are not included in the UDR.

e. Contact the appropriate Army component listed below for additional information. This includes notifications of additions, changes, or deletions to your UDR distribution requirements.

| Active Army | Army Reserves | National Guard |
|---|---|---|
| | | |
| USAMMA<br>ATTN: MCMR-MMO-AS<br>1423 Sultan Dr, Suite 100<br>Fort Detrick MD 21702-5001<br>Telephone:<br>DSN 343-4060<br>301-619-4060<br>Telefax:<br>DSN 343-2938 or<br>301-619-2938 | Office of the Chief, Army Reserve<br>ATTN: DAAR-DF-FI<br>1815 N. Fort Meyer Dr<br>Arlington VA 22209-3808<br>Telephone:<br>DSN 329-0629 or<br>703-601-0629 | Army National Guard,<br>Readiness Center<br>111 S. George Mason Dr<br>ATTN: NGB-ARP-H<br>Arlington VA 22204-1382<br>Telephone:<br>DSN 327-7146 or<br>703-607-7146<br>Telefax:<br>DSN 327-7187/7183<br>703-607-7187/7183 |

## 11-9. EQUIPMENT PUBLICATIONS DEVELOPMENT

a. The Publications Branch of the Acquisition Support Division develops interactive electronic technical manuals and equipment literature for medical equipment CDs. The interactive manuals are created using Interactive Authoring and Display System (IADS) software. A separate responsibility of the branch is to provide all available medical equipment literature in PDF on a CD. CDs are distributed to both TOE

and TDA units and contain set-up procedures, repair procedures, 10/20 standards, and repair parts information.

b. Currently USAMMA MMO-AS has published 8 CDs with manufacturer's literature in PDF. Three CDs of IETMs are available. One CD is dedicated to the Zoll Defibrillator, another CD is dedicated to the Philips BuckyDiagnost equipment, and the third CD is a compilation of various items of equipment. To see the table of contents for each CD and to order copies of the CDs, go to

**http://www.usamma.army.mil/maintenance/tech-manuals.cfm**

## APPENDIX A. INSTRUCTIONS FOR RECORDING DIN-PACS MEDICAL SYSTEMS ON ACTIVITY PROPERTY BOOKS FOR SITES USING DMLSS

DMLSS users will adhere to the following procedures to establish DIN-PACS as a system on the property book.

A-1. Establish a due in for the item in accordance with DMLSS procedures.

A-2. Receive the system in accordance with DMLSS and local procedures. Identify this as a system item (System ECN). This is an actual item and should be the major item of the system. For DIN-PACS, this item will be one of the main servers as identified by the APPMO, telephone 301-619-3322.

A-3. Gain the other components of the system using the DMLSS ETM Gain module with the reason "Component Gain" with the actual price of the component. Ensure the components are associated with the system ECN. The device nomenclatures for the components are listed in Table A-1.

**Table A-1. DEVICE NOMENCLATURES**

| Nomenclature | Guideline (if any) |
|---|---|
| | |
| Diagnostic Work Station (4 monitor) | Account for using the CPU serial number |
| Diagnostic Work Station (2 monitor) | Account for using the CPU serial number |
| Diagnostic Work Station (1 monitor) | Account for using the CPU serial number |
| Review Workstation (2 monitor) | Account for using the CPU serial number |
| Review Workstation (1 monitor) | Account for using the CPU serial number |
| Color Review Workstation (2 monitor) | Account for using the CPU serial number |
| Color Review Workstation (1 monitor) | Account for using the CPU serial number |
| Quality Control Workstation (2 monitor) | Account for using the CPU serial number |
| Quality Control Workstation (1 monitor) | Account for using the CPU serial number |
| PACS Broker | None |
| RIS Terminal | None |
| Network Printer | None |
| Web Server | None |
| Teleradiology Gateway | None |
| Domain Controller | None |
| Archive | None |
| Archive Server | None |
| Database Server | None |
| Telemaintenance Server | None |
| PACS to PACS Proxy Server | None |
| Digitizer | None |
| DICOM IT (at sites that capture ultrasound images) | None |

A-4. Return to the system record and select the Acquisition Cost icon and adjust the purchase price to reflect the cost of the major item recorded there. Refer to paragraph 2 above.

A-5. Select the System ECN record in the Equipment Search screen. Selecting the Print icon and then the Detail button generates a report for the ECN. This report lists the system and components for the selected system record and displays the Total System Acquisition Cost. The Systems and Components report, in the Standard Inquiry portion of the Reports module, also shows this information. The Components tab of the System ECN tab will show the total system acquisition cost.

A-6. Ensure components requiring medical maintenance services have a Maintenance Requirement Indicator of “Yes” and appropriate services are scheduled.

A-7. If the DIN-PACS system is already on the property book, the following is required:

a. Ensure the system ECN is the major item of the system. For DIN-PACS, this item will be one of the main servers as identified by the APPMO. If necessary, change the Equipment Type of the identified major end item by opening the appropriate equipment record and selecting "System" in the Equipment Type drop down window found on the main tab.

b. Ensure the total system acquisition cost, including all PACS components, is reflected on the system ECN. To accomplish this, simply open the equipment record for the system ECN and select the Acquisition Cost vertical tool bar button.

c. Ensure all component equipment records have an Equipment Type of "Component," the appropriate System ECN and an acquisition cost of $0.00. In addition, ensure components requiring medical maintenance services have a Maintenance Requirement Indicator of "Yes" and appropriate services scheduled.

# A NOTE FOR APPENDICES B AND C:

## LISTING UPDATES FOR APPENDICES B AND C OF SB 8-75-S5 - 2007:

The listings appearing in the website version of Appendices B and C for *SB 8-75-S5* are not the same as the listings as printed in the DA published version.

This variance is due to the time difference between the creation of the hard copy published listing version and the website updated listing.

If you have questions regarding the difference in the hardcopy and website listings in Appendices B and C, please contact the USAMMA Unit Assemblage Database Manager at DSN 343-4315 or 301-619-4315.

# APPENDIX B. MAJOR MEDICAL ASSEMBLAGES IN NATIONAL STOCK NUMBER SEQUENCE

| NATIONAL STOCK NUMBER | NOMENCLATURE | SUPPLY CATALOG NUMBER | LINE ITEM NUMBER | UNIT ASSEMBLAGE CODE |
|---|---|---|---|---|
| 5180006117923 | TOOL KT MED EQ REPAI | SC 5180-8-A14 | W45334 | 8001 |
| 5180014831431 | TOOL KT MEDEQ UNITLE | SC 5180-8-A11 | W45197 | 8004 |
| 6545002319421 | MEDICAL PACK AIRMANS | SC 6545-8-M57 | | 0313 |
| 6545009494000 | MED INST SUP SET | SC 6545-8-D32 | M31506 | 106A |
| 6545013320144 | MMS NEUROSR AUG DEP/ | SC 6545-8-MQ5 | M48305 | M318 |
| 6545013320145 | MMS MAXO-FACIAL HEAD | SC 6545-8-MQ7 | M09098 | M320 |
| 6545013479099 | MMS HEMODIALYSIS AUG | SC 6545-8-MT7 | M86493 | M437 |
| 6545014497010 | MES ENDEM DISEASE | SC 6545-8-L11 | M22214 | 211A |
| 6545014497013 | MES ENDEM DISEASE VE | SC 6545-8-L12 | M37839 | 212A |
| 6545014497014 | MES LAB GEN FLD AREA | SC 6545-8-L13 | M43740 | 213A |
| 6545014497015 | MES ANIMAL PATHOLOGY | SC 6545-8-L16 | M33322 | 214A |
| 6545014497016 | MES ENTOMOLOGIC LAB | SC 6545-8-L15 | M37771 | 215A |
| 6545014497018 | MES AREA MED LAB IND | SC 6545-8-L14 | M22714 | 216A |
| 6545014497023 | MES ENVIRONMENT LAB | SC 6545-8-L17 | M25430 | 217A |
| 6545014497026 | MES ENVIRONMEN HEALT | SC 6545-8-L18 | M25180 | 218A |
| 6545014497028 | MES LAB RADIOLOGICAL | SC 6545-8-L19 | M29659 | 219A |
| 6545014497058 | MES BIOLOGCL WARFARE | SC 6545-8-L20 | M23718 | 220A |
| 6545014497061 | MES BIOCHEM&CHEM WAR | SC 6545-8-L21 | M23468 | 221A |
| 6545014535658 | MES HA ADULT AUG | SC 6545-8-R50 | | 623A |
| 6545014806913 | WATER DIST & WASTE S | SC 6545-8-W04 | W53373 | 225A |
| 6545014822907 | SHOP SET MED GS LEVE | SC 6545-8-A16 | T24386 | 8005 |
| 6545014914698 | WDWWMS MAINT SET HOS | SC 6545-8-W07 | W42371 | M586 |
| 6545014914728 | WASTE WATER MGT SET | SC 6545-8-W06 | W49853 | M585 |
| 6545014914732 | WATER DISTRIB SET HO | SC 6545-8-W05 | W53123 | M584 |
| 6545014921739 | RODENT SURV SET-2003 | SC 6545-8-M52 | S10157 | 300A |
| 6545014992329 | MES LAB FLD LTWT/200 | SC 6545-8-M75 | M29159 | 263A |
| 6545015001674 | MMS GEN OPHTHAL SURG | SC 6545-8-ND9 | M86425 | N419 |
| 6545015024969 | WATER DIST SET 1 | SC 6545-8-W15 | W53305 | M784 |
| 6545015024991 | WDWWMS MAINT 164-200 | SC 6545-8-W17 | W42621 | M786 |
| 6545015024992 | WASTEWATER MGT SE MR | SC 6545-8-W16 | W32650 | M785 |
| 6545015025227 | DMS ORAL & MAXILLOFA | SC 6545-8-DE4 | D65925 | M477 |
| 6545015052353 | MMS OPTHAL AUG-2002 | SC 6545-8-ND8 | M47737 | N319 |
| 6545015052715 | MMS OPHTHAL CL- 2005 | SC 6545-8-ND5 | M08667 | N315 |
| 6545015072140 | WATER DIST CONNECT S | SC 6545-8-W08 | W53623 | 226A |
| 6545015074313 | MES WATER QUAL ANAL | SC 6545-8-W10 | Y36849 | 107A |
| 6545015077170 | WATER DIS SE HOS-200 | SC 6545-8-NW2 | W53055 | N322 |
| 6545015086972 | VES ANEST ULTRA AUG | SC 6545-8-V31 | M30340 | 901A |

| NATIONAL STOCK NUMBER | NOMENCLATURE | SUPPLY CATALOG NUMBER | LINE ITEM NUMBER | UNIT ASSEMBLAGE CODE |
|---|---|---|---|---|
| 6545015086989 | VES FOOD INS IND-200 | SC 6545-8-V32 | H84228 | 911A |
| 6545015086996 | VES FIELD MICROB-200 | SC 6545-8-V23 | V96918 | 913A |
| 6545015087000 | VES FOOD TESTING | SC 6545-8-V24 | | 914A |
| 6545015087015 | VES 50 PAT SML 2005 | SC 6545-8-V35 | M30136 | 905A |
| 6545015105870 | MES SOF PHYS THER200 | SC 6545-8-S10 | | 500A |
| 6545015182964 | MES BLD PROC DET-200 | SC 6545-8-L23 | M23423 | 504A |
| 6545015216669 | MES IND HYG FLD 2004 | SC 6545-8-W19 | M28909 | 109A |
| 6545015216670 | MES EPIDEM SVC-2004 | SC 6545-8-E07 | M24993 | 207A |
| 6545015216671 | MES CLIN PSY FLD/200 | SC 6545-8-M83 | E37001 | 253A |
| 6545015216673 | MES X-RAY FLD LWT200 | SC 6545-8-M98 | M45613 | 262A |
| 6545015216675 | MMS MED MAINT 84/200 | SC 6545-8-NN3 | M72084 | N523 |
| 6545015216677 | MMS MED MAINT164/200 | SC 6545-8-MV3 | M72152 | N725 |
| 6545015216680 | MMS MED MAINTDEP/200 | SC 6545-8-ND1 | M47987 | N321 |
| 6545015229741 | MMS X-RAY DEPMED-200 | SC 6545-8-NP5 | M86675 | N305 |
| 6545015244460 | MMS OPER RM DEPMEDS\ | SC 6545-8-NL8 | M72936 | N301 |
| 6545015244464 | MMS CEN MAT DEPMEDS\ | SC 6545-8-NL9 | M08417 | N302 |
| 6545015246149 | MMS LAB LIQ 84BD-200 | SC 6545-8-NN1 | M73732 | N504 |
| 6545015246153 | MMS LAB GEN 164-2005 | SC 6545-8-MR5 | M13275 | N703 |
| 6545015246157 | MMS LAB GEN 84BED200 | SC 6545-8-NT9 | M73482 | N503 |
| 6545015246160 | MMS LAB LIQ B CSH200 | SC 6545-8-NP4 | M09166 | N304 |
| 6545015246167 | MMS LAB GEN 2004 | SC 6545-8-NP1 | M73425 | N303 |
| 6545015249238 | MMS LAB LIQ BLD 2004 | SC 6545-8-NN5 | M08849 | N704 |
| 6545015257095 | OPTICAL FAB UNIT-200 | SC 6545-8-E03 | N22073 | 003A |
| 6545015263337 | MMS PHARM 164BED 200 | SC 6545-8-NN6 | M73186 | N706 |
| 6545015265128 | MMS PHARMACY 2004 | SC 6545-8-NP6 | M73118 | N306 |
| 6545015265130 | MMS PHAR 84 BED 2004 | SC 6545-8-NN2 | M73254 | N506 |
| 6545015275888 | MMS CMS 164 BED-2005 | SC 6545-8-NN7 | M08951 | N742 |
| 6545015275890 | MMS CMS AUG 84BD-200 | SC 6545-8-NN4 | M13428 | N542 |
| 6545015275893 | MMS MED SVC 84B-2005 | SC 6545-8-NU4 | M72423 | N513 |
| 6545015275898 | MMS MED SVC CLIN 200 | SC 6545-8-NQ1 | M72428 | N313 |
| 6545015275900 | MMS CENT MAT AUG-200 | SC 6545-8-ND6 | M08485 | N342 |
| 6545015275901 | MMS MED SVC 164B-200 | SC 6545-8-NQ7 | M72355 | N713 |
| 6545015277020 | MMS TRIAGE EMERG-200 | SC 6545-8-NP2 | M73050 | N308 |
| 6545015277022 | MMS POST-OP ICU-2005 | SC 6545-8-MP6 | M09576 | N309 |
| 6545015277613 | MMS INTERMD CARE-200 | SC 6545-8-NP7 | M08599 | N310 |
| 6545015277994 | MMS MED MNT AUG-2005 | SC 6545-8-ND4 | M09349 | N324 |
| 6545015277996 | MMS OBGYN CLIN-2005 | SC 6545-8-MQ4 | M31824 | N316 |

(continued) APPENDIX B. MAJOR MEDICAL ASSEMBLAGES
IN NATIONAL STOCK NUMBER SEQUENCE

| NATIONAL STOCK NUMBER | NOMENCLATURE | SUPPLY CATALOG NUMBER | LINE ITEM NUMBER | UNIT ASSEMBLAGE CODE |
|---|---|---|---|---|
| 6545015277999 | MMS ORTHO CAST CL200 | SC 6545-8-MQ2 | M72868 | N314 |
| 6545015278001 | MMS PHYS THER AUG200 | SC 6545-8-NP8 | M72800 | N412 |
| 6545015278008 | MMS PHYSICAL OCC-200 | SC 6545-8-MP9 | M72050 | N312 |
| 6545015278010 | MES SF TACTICAL- 200 | SC 6545-8-E08 | M29999 | 268A |
| 6545015278013 | MES PRIM GYN CARE200 | SC 6545-8-E01 | M29701 | 301A |
| 6545015281683 | MMS ORTHOP SURG 2005 | SC 6545-8-ND7 | | N417 |
| 6545015285018 | MMS MIN CARE WD-2005 | SC 6545-8-MP8 | M48055 | N311 |
| 6545015293904 | MMS X-RAY LOWCAP 200 | SC 6545-8-ND3 | M73175 | N334 |
| 6545015293911 | MMS RADIO COMP-2005 | SC 6545-8-NE4 | M09826 | N432 |
| 6545015294218 | DES COMP DENTAL-2005 | SC 6545-8-D90 | D43802 | 174A |
| 6545015294225 | DES DENTAL HYG-2005 | SC 6545-8-D91 | D39228 | 179A |
| 6545015294430 | DES PERIODONTICS | SC 6545-8-D94 | D95730 | 277A |
| 6545015294440 | DES PROSTHETICS-2005 | SC 6545-8-D93 | D95617 | 271A |
| 6545015294443 | DES X-RAY FIELD-2005 | SC 6545-8-D92 | D39478 | 270A |
| 6545015294448 | DSS EMERGDEN REP | SC 6545-8-D96 | F95778 | 279A |
| 6545015294449 | DES DENTAL SUP-2005 | SC 6545-8-D95 | D95343 | 274A |
| 6545015294452 | DES MAINTAIN CARE | SC 6545-8-D64 | D95867 | 273A |
| 6545015295182 | DES ENDODONTICS-2005 | SC 6545-8-D80 | D43641 | 278A |
| 6545015299040 | MMS MED SUP 164B-200 | SC 6545-8-DE7 | M14585 | N783 |
| 6545015299063 | MMS MED SUP 84 B-200 | SC 6545-8-DE5 | M14517 | N583 |
| 6545015311942 | OES MULTIVIS AUG/200 | SC 6545-8-E06 | P47705 | 006A |
| 6545015311946 | OES FIELD COMBAT | SC 6545-8-E09 | | 324A |
| 6545015346129 | MES GROUND AMBU/2006 | SC 6545-8-M72 | M26413 | 256A |
| 6545015346135 | MES TRAUMA FIELD-200 | SC 6545-8-M93 | M30499 | 264A |
| 6545015346137 | MES SICK CALL FL 200 | SC 6545-8-M74 | M30156 | 265A |
| 6545015346139 | MES AIR AMBULAN-2006 | SC 6545-8-M87 | M29213 | 257A |
| 6545015346592 | MES FORWARD SURG | SC 6545-8-M89 | M45375 | 267B |
| 6545015357061 | MES PATIENT HOLD-200 | SC 6545-8-M80 | M29633 | 261A |
| 6545015375019 | MES CHEM AGT PA-2006 | SC 6545-8-M78 | M25865 | 258B |
| 6545015375022 | MES CHEM AG TRMT-200 | SC 6545-8-M79 | M23673 | 249B |
| 6545015399771 | VES LARGE ANIMAL/200 | SC 6545-8-V64 | M30067 | 921A |
| 6545015399775 | VES FOOD INSP-2005 | SC 6545-8-V50 | V02063 | 910A |
| 6545015399777 | VES SURG INST-2005 | SC 6545-8-V56 | U65754 | 912A |
| 6545015399779 | VES ANIMAL DISEA-200 | SC 6545-8-V54 | V02346 | 920A |
| 6545015400971 | MES PHYICAL THER-200 | SC 6545-8-P12 | | 412A |

E N D  O F  R E P O R T

# A NOTE FOR APPENDICES B AND C:

## LISTING UPDATES FOR APPENDICES B AND C OF SB 8-75-S5 - 2007:

The listings appearing in the website version of Appendices B and C for *SB 8-75-S5* are not the same as the listings as printed in the DA published version.

This variance is due to the time difference between the creation of the hard copy published listing version and the website updated listing.

If you have questions regarding the difference in the hardcopy and website listings in Appendices B and C, please contact the USAMMA Unit Assemblage Database Manager at DSN 343-4315 or 301-619-4315.

## APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505000599017 | CHLORDI HCL CAP 500S | Q |
| 6505000599019 | CHLORDIAZEPOXIDE 500S | Q |
| 6505000674551 | CHLORAL HYD SYRP473ML | Q |
| 6505000744702 | DIPHENOXYLATE TAB500S | Q |
| 6505001049000 | ALCOHOL USP 5 GAL | R |
| 6505001050000 | ALCOHOL DEHYDRATED1PT | R |
| 6505001068715 | DEXTROAMPHET TAB 100S | R |
| 6505001118359 | PROPOXYPHENE NAPSYLAT | Q |
| 6505001118373 | PROPOXYPHENE NAPSYLAT | Q |
| 6505001118383 | PROPOXYPHENE NAPSYLAT | Q |
| 6505001175526 | CHLORDIAZEPOX HCL100S | Q |
| 6505001179171 | THIOPENTAL SOD F/INJ | Q |
| 6505001181914 | DIPHENOXYLATE HCL100S | Q |
| 6505001182132 | CODEINE SULFATE TAB | R |
| 6505001269360 | MEPERIDINE HCL 30 ML | R |
| 6505001269375 | MEPERIDINE HCL 100S | R |
| 6505001320318 | DIAZEPAM TAB 2 MG100S | Q |
| 6505001323030 | PAREGORIC USP 1 PT | Q |
| 6505001403050 | SECOBARB SOD CAP 100S | R |
| 6505001711398 | OXAZEPAM CAPS15MG100S | Q |
| 6505001747116 | PHENOBARBITAL ELIXIR | Q |
| 6505001756057 | FLURAZEPAM HCL CAPS | Q |
| 6505001806030 | PENTAZOCINE&NALOXONE | Q |
| 6505001978396 | MEPHOBARBITAL TABS | Q |
| 6505002077718 | MEPHOBARBITAL TABS | Q |
| 6505002077742 | MEPHOBARBITAL TABS250 | Q |
| 6505002695837 | METHYLPHENIDATE TABS | R |
| 6505003574684 | HYDROMORPHONE HCL 25S | R |
| 6505003723032 | CODEINE PHOS&ACETA TA | Q |
| 6505004002054 | CODEINE PHOS&ACETA TA | Q |
| 6505004007294 | FLURAZEPAM HCL CAPS | Q |
| 6505004544811 | MEPERIDINE HCL 1ML25S | R |
| 6505005508464 | MEPROBAMATE TAB 500S | Q |
| 6505005594819 | PHENOBARB20MG/5ML 1PT | Q |
| 6505005825357 | PENTOBARBITAL SOD INJ | R |
| 6505005843174 | METHYLPHENIDATE5MG100 | R |
| 6505005843179 | METHYLPHENIDATE HCL | R |
| 6505005843626 | TESTOSTERONE CYPIONAT | Q |
| 6505006168979 | CODEINE PHOSPHATE 1OZ | R |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505006198867 | PHENOBARBITAL TABS | Q |
| 6505006555699 | LEVORPHANOL TAB2MG100 | R |
| 6505006873620 | MORPHINE SULF TAB100S | R |
| 6505006874035 | HYDROMORPHONE HCL TAB | R |
| 6505006895513 | PENTAZOCINE LACTA INJ | Q |
| 6505007837218 | DIAZEPAM TAB 5MG 500S | Q |
| 6505008122596 | MORPH SULF INJ10MG25S | R |
| 6505008516589 | MEPERIDINE 50 MG 25S | R |
| 6505009000900 | DIAZEPAM TABS 2MG500S | Q |
| 6505009053408 | DIAZEPAM TABLETS 500S | Q |
| 6505009268843 | CHLORDIAZEPOXIDE 10S | Q |
| 6505009424560 | LEVORPHANOL TARTRAT10 | Q |
| 6505009582364 | PROPOXY HCL 65MG 500S | Q |
| 6505009586587 | DIPHENOXYLATE HCL&ATR | Q |
| 6505009589186 | TESTOSTERONE CYPIONAT | Q |
| 6505009617455 | OXAZEPAM CAPS 500S | Q |
| 6505009617460 | OXAZEPAM CAPS 500S | Q |
| 6505009617513 | OXAZEPAM CAPS30MG500S | Q |
| 6505010035343 | THIOPNTL SOD INJ5GM25 | Q |
| 6505010058496 | CHLORDIAZEPOXIDE 100S | Q |
| 6505010104169 | FENTANYL CITRATE&DROP | R |
| 6505010104170 | FENTANYL CIT INJ2ML10 | R |
| 6505010242626 | PENTAZOCINE INJ1ML25S | Q |
| 6505010282086 | TESTOSTERONE CYPIONAT | Q |
| 6505010309493 | OXYCODONE&ASPIRIN TAB | R |
| 6505010351963 | ACETAMINOPH&CODEI PHO | Q |
| 6505010410558 | THIOPENTAL SOD F/INJ | Q |
| 6505010418165 | FLUOXYMESTERONE TABS | Q |
| 6505010429261 | DIPHENOXYLATE HCL1000 | Q |
| 6505010451298 | PHENOBARBITAL ELIXIR | Q |
| 6505010473873 | METHADONE HCL TABS100 | R |
| 6505010496735 | CLONAZEPAM TABS 100S | Q |
| 6505010555070 | CLONAZEPAM TAB2MG100S | Q |
| 6505010555071 | CLONAZEPAM TAB1MG100S | Q |
| 6505010555248 | PHENOBARBITAL TAB100S | Q |
| 6505010555249 | PHENOBARBITAL TAB100S | Q |
| 6505010579846 | LORAZEPAM TABS1MG100S | Q |
| 6505010628008 | LORAZEPAM TABS2MG100S | Q |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505010687663 | LORAZEPAM TABS1MG500S | Q |
| 6505010719112 | ISOMETHEPTENE MUCATE | Q |
| 6505010731316 | FENTANYL CITRATE INJ | R |
| 6505010825509 | OXYCODONE&ACETAMIN TA | R |
| 6505010946143 | PEMOLINE TABLETS 100S | Q |
| 6505010980221 | GUAIFENESIN&CODEINE | Q |
| 6505010985801 | CHLORDIAZEPOXIDE CAPS | Q |
| 6505010985802 | DIAZEPAM TAB5MG 100S | Q |
| 6505010985803 | DIAZEPAM TAB10MG 100S | Q |
| 6505010994064 | CHLORD HCL CAP10MG100 | Q |
| 6505011107196 | MORPHINE SULF10MG/5ML | R |
| 6505011155262 | HYDROMORPHONE HCL TAB | R |
| 6505011160481 | TEMAZEPAM CAP15MG 500 | Q |
| 6505011160482 | TEMAZEPAM CAPS30MG500 | Q |
| 6505011189920 | HYDROMORPHONE HCL TAB | R |
| 6505011210704 | FENTANYL CITRATE INJ | R |
| 6505011210705 | FENTANYL CITRATE INJ | R |
| 6505011282441 | METHADONE HCL TABS100 | R |
| 6505011403199 | ALPRAZOLAM TABS 100S | Q |
| 6505011403200 | ALPRAZOLAM 1MG 100S | Q |
| 6505011403201 | ALPRAZOLAM TABS 100S | Q |
| 6505011403202 | ALPRAZOLAM TABS IS100 | Q |
| 6505011439269 | ALPRAZOLAM TAB 100S | Q |
| 6505011461137 | OXAZEPAM CAPS10MG100S | Q |
| 6505011468044 | BUTALBITAL TAB 1000S | Q |
| 6505011479462 | TEMAZEPAM CAPS 100S | Q |
| 6505011479463 | TEMAZEPAM CAPS30MG100 | Q |
| 6505011479537 | CODEINE PHOS SYR 4 OZ | Q |
| 6505011487011 | PEMOLINE TABS 100S | Q |
| 6505011494122 | OXYCODONE&ACETAMIN TA | R |
| 6505011494123 | HYDROMORPHONE HCL TAB | R |
| 6505011532985 | METHYLPHENIDATE HCL | R |
| 6505011533183 | OXYMETHOLONE TABS100S | Q |
| 6505011533284 | MORPHINE SULF INJ20ML | R |
| 6505011533300 | METHOHEX SOD INJ 50ML | Q |
| 6505011533448 | MEPERIDINE HCL50MG1PT | R |
| 6505011533733 | KETAMINE HCL INJ5ML10 | Q |
| 6505011534199 | METHYLPHENIDATE HCL | R |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505011534318 | HYDROMORPHONE HCL SUP | R |
| 6505011534373 | PHENOBARBITAL INJ 25S | Q |
| 6505011534377 | CHLORAZEPATE TABS100S | Q |
| 6505011541741 | ALCOHOL DEHYD 1ML 100 | R |
| 6505011561588 | OPIUM PWD&BELLAD SUPP | R |
| 6505011561604 | FLURAZEPAM HCL CAPS | Q |
| 6505011561606 | LURAZEPAM HCL CAPS100 | Q |
| 6505011575987 | TEMAZEPAM CAPS 100S | Q |
| 6505011583628 | PHENOBARBITAL TABS100 | Q |
| 6505011604201 | METHYLPHENIDATE TABS | R |
| 6505011638089 | ACTAMINOPH&CODEI PHOS | Q |
| 6505011640583 | METHADONE HCL SOL | R |
| 6505011682607 | CODEINE PHOSPHATE16OZ | Q |
| 6505011690283 | CHLORDIAZEPOX CAP 100 | Q |
| 6505011695936 | OPIUM PWDRD&BELLA SUP | R |
| 6505011737038 | COCAINE HCL 5 GM | R |
| 6505011764621 | MORPHINE SULF TABS100 | R |
| 6505011787736 | PROPOXYPHENE NAPSYLAT | Q |
| 6505011787737 | BUTALBITAL ASP&CAF100 | Q |
| 6505011794968 | TRIAZOLAM TABS IS 100 | Q |
| 6505011811409 | PROMETHAZINE HCL&CODE | Q |
| 6505011858835 | TESTOSTERONE PROPIONA | Q |
| 6505011899903 | HYDROCODONE BITAR100S | Q |
| 6505011932690 | SUFENTANIL CITRATE IN | R |
| 6505011938484 | MORPHINE SUL SOL120ML | R |
| 6505011947256 | SUFENTANIL CITRATE IN | R |
| 6505011969501 | ALPRAZOLAM TABS 500S | Q |
| 6505011973966 | ALPRAZLM TAB.25MG500S | Q |
| 6505011979003 | ALPRAZOLAM TAB1MG500S | Q |
| 6505012005793 | SUFENTANIL CITRATE IN | R |
| 6505012017011 | MORPHINE SUL SUPPOS12 | R |
| 6505012017012 | MORPHINE SUL SUPPOS12 | R |
| 6505012041859 | MORPHINE SUL INJ 10S | R |
| 6505012045419 | MORPHINE SULF INJ 10S | R |
| 6505012090723 | LORAZEPAM INJ 1 ML | Q |
| 6505012091206 | MORPHINE SUL EX-RE TA | R |
| 6505012104450 | OXYCODONE HCL&ACETAMI | R |
| 6505012131145 | MORPHINE SULF SOL30ML | R |
| 6505012150945 | CODEI SULF TABS 100S | R |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505012196333 | PEMOLINE TABS 100S | Q |
| 6505012198564 | BUTALBI ASP CAF&CO100 | Q |
| 6505012226566 | THIOPENTAL SOD F/INJ | Q |
| 6505012303125 | AMOBARBITAL SOD 10S | R |
| 6505012303129 | DIAZEPAM TAB2MG100USP | Q |
| 6505012303130 | DIAZEPAM TABS 5MG100S | Q |
| 6505012303131 | DIAZEPAM TABS 10MG100 | Q |
| 6505012349586 | DIETHYLPROPION HCL100 | Q |
| 6505012394704 | MORPHINE SULF TAB250S | R |
| 6505012395492 | MIDAZOLAM HCL INJ 10S | Q |
| 6505012413591 | TRIAZOLAM TABS 100S | Q |
| 6505012415747 | MIDAZOLAM HCL INJ 10S | Q |
| 6505012444736 | MIDAZOLAM HCL INJ 10S | Q |
| 6505012448014 | MIDAZOLAM HCL INJ 10S | Q |
| 6505012511850 | CLORAZEPATE DIPOT TAB | Q |
| 6505012520802 | CLORAZEPATE DIPOTA TA | Q |
| 6505012520803 | MORPHINE SULFATE SOL | R |
| 6505012554420 | MORPHINE SULF TAB100S | R |
| 6505012600904 | TRIAZOLAM TABS 500S | Q |
| 6505012601236 | METHYLPHENIDATEHCL100 | R |
| 6505012622177 | TRIAZOLAM TABLETS100S | Q |
| 6505012624974 | CLORAZEPATE DIPOTA TA | Q |
| 6505012650009 | ALFENTANIL HCL INJ10S | R |
| 6505012671440 | METHYLTESTOSTERONE | Q |
| 6505012672514 | CHLORAL HYDRATE SUP12 | Q |
| 6505012691767 | SODIUM BARBITAL 100GM | Q |
| 6505012691771 | CHLORDIAZEPOX HCL100S | Q |
| 6505012696054 | OXAZEPAM CAPS I.S.100 | Q |
| 6505012721975 | MIDAZOLAM HCL INJ 10S | Q |
| 6505012722037 | ALFENTANIL HCL INJ10S | R |
| 6505012732401 | DRONABINOL CAPS5MG25S | Q |
| 6505012740951 | DIAZEPAM INJ 2ML UNIT | Q |
| 6505012747178 | ALFENTANIL HCL INJ 5S | R |
| 6505012775327 | HYDROCODONE BITAR TAB | Q |
| 6505012801074 | MIDAZOLAM HCL INJ 2ML | Q |
| 6505012833664 | MORPHINE SULF TABS100 | R |
| 6505012870624 | HYDROCODONE BITAR&ACE | Q |
| 6505012879652 | ACETAMINOPHEN&COD100S | Q |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505012899827 | CHLORDIAZEPOX HCL100S | Q |
| 6505012921048 | HYDROCODONE&CHLO473ML | Q |
| 6505013012299 | BUTORPHANOL TARTRAT | Q |
| 6505013025530 | MORPHINE SULF INJ10MG | R |
| 6505013059159 | OXYCODONE HCL SOL | R |
| 6505013120914 | LORAZEPAM TABS1MG100S | Q |
| 6505013121241 | OXYCODONE HCL&AC500ML | R |
| 6505013201320 | HYDROCODONE BITAR 100 | Q |
| 6505013201709 | HYDROCODONE BITAR100S | Q |
| 6505013201710 | HYDROCODONE BITAR500S | Q |
| 6505013201711 | HYDROCODONE BITAR TAB | Q |
| 6505013217751 | QUAZEPAM TABLETS 100S | Q |
| 6505013217752 | QUAZEPAM TABLETS 100S | Q |
| 6505013225891 | MORPHINE SULFATE EX | R |
| 6505013232648 | MORPHINE SULF SUPP12S | R |
| 6505013232650 | MORPHINE SULF SUPP12S | R |
| 6505013235259 | DRONABINOL CAPS 25S | R |
| 6505013236576 | MORPHINE SULF INJ 10S | R |
| 6505013306281 | COCAINE HCL SOL 10ML | R |
| 6505013309382 | MORPHINE SULF INJ 10S | R |
| 6505013309387 | MORPHINE SULF SO100ML | R |
| 6505013359388 | FENTANYL TRANSDERMAL5 | R |
| 6505013359389 | FENTANYL TRANSDERMAL5 | R |
| 6505013359390 | FENTANYL TRANSDERMAL5 | R |
| 6505013359391 | FENTANYL TRANSDERMAL5 | R |
| 6505013366197 | ALPRAZOLAM TABS 100S | Q |
| 6505013366198 | ALPRAZOLAM TABS 500S | Q |
| 6505013391909 | KETAMINE HCL INJ 10S | Q |
| 6505013401509 | CLONAZEPAM TABLETS100 | Q |
| 6505013404829 | CLONAZEPAM TABLETS100 | Q |
| 6505013460174 | FLURAZEPAM HCL CAP100 | Q |
| 6505013462060 | CLONAZEPAM TABS 100S | Q |
| 6505013479104 | LORAZEPAM INJ 10ML | Q |
| 6505013488197 | DIAZEPAM F/ORAL SOL | Q |
| 6505013488202 | MORPHINE SULF ORAL SO | R |
| 6505013537718 | DIAZEPAM CONCENTRATE | Q |
| 6505013539851 | MORPHINE SULFATE INJ | R |
| 6505013539856 | MEPERIDINE HCL INJ10S | R |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505013559806 | TRIAZOLAM TABLETS 500 | Q |
| 6505013560253 | METHYLPHENIDATE HCL | R |
| 6505013563869 | CHLORAL HYDRATE SYRUP | Q |
| 6505013591863 | DIPHENOXYLATE HCL TAB | Q |
| 6505013595148 | LORAZEPAM TABLETS100S | Q |
| 6505013625340 | OXYCODONE AND ACETA | R |
| 6505013652072 | LORAZEPAM TABS 100S | Q |
| 6505013664754 | BUPRENORPHINE HCL INJ | Q |
| 6505013675261 | KETAMINE HCL INJ 10S | Q |
| 6505013679542 | TEMAZEPAM CAPS 100S | Q |
| 6505013718384 | BUTORPHANOL TARTRATE | Q |
| 6505013734322 | ALPRAZOLAM TABS 100S | Q |
| 6505013741407 | MORPHINE EX-REL TABS | R |
| 6505013755685 | TEMAZEPAM CAPS 100S | Q |
| 6505013758517 | ISOMETHEPTENE MUCATE | Q |
| 6505013771441 | MORPHINE SULF EX TABS | R |
| 6505013780251 | MORPHINE SULF TABS | R |
| 6505013883743 | HYDROCODONE BITARTRAT | Q |
| 6505013896009 | MORPHINE SULFATE INJ | R |
| 6505013939835 | HYDROCODONE BITARTRAT | Q |
| 6505013942765 | HYDROCODONE BITARTRAT | Q |
| 6505013946503 | HYDROCODONE BITARTRAT | Q |
| 6505013952173 | MORPHINE SULF EX-REL | R |
| 6505013952611 | GUAIFENESIN&CODEINE | Q |
| 6505014112723 | LORAZEPAM INJ 1ML 25S | Q |
| 6505014112724 | LORAZEPAM INJ 1ML 25S | Q |
| 6505014234981 | TESTOSTERONE TRANSDER | Q |
| 6505014328996 | TRIAZOLAM TABS 100S | Q |
| 6505014354310 | ZOLPIDEM TARTRATE TAB | Q |
| 6505014354311 | ZOLPIDEM TARTRATE TAB | Q |
| 6505014354312 | ZOLPIDEM TARTRATE TAB | Q |
| 6505014354313 | ZOLPIDEM TARTRATE TAB | Q |
| 6505014368108 | DEXFENFLURAMINE HCL60 | Q |
| 6505014369546 | HYDROMORPHONE HCL INJ | R |
| 6505014420346 | REMIFENTANIL HCL INJ | R |
| 6505014420348 | REMIFENTANIL HCL INJ | R |
| 6505014420350 | REMIFENTANIL HCL INJ | R |
| 6505014437061 | CHLORDIAZEPOXIDE HCL | Q |
| 6505014503031 | MORPHINE SULFATE IN | R |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6505014636039 | DEXTROAMPHETAMINE S | R |
| 6505014636040 | DEXTROAMPHETAMINE S | R |
| 6505014723415 | METHYLPHENIDATE HCL | R |
| 6505014830274 | MORPHINE SULFATE INJ | R |
| 6505014856206 | SOLUTION EUTHANASIA | R |
| 6505014860173 | METHYLPHENIDATE HYD | R |
| 6505014860228 | METHYLPHENIDATE HCL | R |
| 6505014993495 | MEPERIDINE HCL INJ | R |
| 6505015011389 | LORAZEPAM INJ USP | Q |
| 6505015038935 | HYDROCODONE BITARTRAT | Q |
| 6505015053476 | DIAZEPAM INJ 2ML 10S | Q |
| 6505015054693 | MEPERIDINE HCL INJ10S | R |
| 6505015055812 | MEPERIDINE HCL INJ10S | R |
| 6505015055813 | MORPHINE SULFATE INJ | R |
| 6505015056025 | LORAZEPAM INJ 1ML 10S | Q |
| 6505015064143 | MORPHINE SULFATE INJ | R |
| 6505015065867 | MEPERIDINE HCL INJ10S | R |
| 6505015084409 | PHENOBARBITAL SOD INJ | Q |
| 6505015131952 | MORPHINE SULFATE INJ | R |
| 6505015138434 | DIAZEPAM INJ 10ML 5S | Q |
| 6505015189609 | LORAZEPAM INJ USP 10S | Q |
| 6505015189650 | LORAZEPAM INJ 10S | Q |
| 6505015194255 | ZOLPIDEM TARTRATE TAB | Q |
| 6505015194260 | ZOLPIDEM TARTRATE TAB | Q |
| 6505015195278 | ZOLPIDEM TARTRATE 30S | Q |
| 6505015230306 | HYDROCODONE BITARTRAT | Q |
| 6505015274077 | CODEINE PHOS/ACETAMIN | Q |
| 6505015284033 | MIDAZOLAM HCL INJ 25S | Q |
| 6505015374228 | ZOLPIDEM TARTRATE CR | Q |
| 6509001181096 | THIAMYLAL SOD INJ 5GM | Q |
| 6509001181099 | KETAMINE HCL INJ 10ML | Q |
| 6509014862796 | TILETAMINE HCL 100MG | Q |
| 6515003184910 | ELECTRODE CAUTERY D4 | R |
| 6520001450176 | GOLD ALLOY CAST 2 PWT | R |
| 6520001450349 | GOLD ALLOY CAST XHARD | R |
| 6520001450350 | GOLD ALLOY CAST SOFT | R |
| 6520005802550 | PLATINUM FOIL 1 PWT | R |
| 6520005805650 | BRAZING ALLOY 730 FIN | R |

(continued) APPENDIX C. LISTING OF CONTROLLED SUBSTANCES WITH ASSIGNED NATIONAL STOCK NUMBER

| NSN | NOMENCLATURE | CIIC |
|---|---|---|
| 6520008172517 | GOLD FOIL CYL SZ 1/64 | R |
| 6520008172518 | GOLD FOIL CYL SZ 1/16 | R |
| 6520008902170 | GOLD PWDR FOIL 2 PWT | R |
| 6520010628207 | SOLDER GOLD DEN 1 DWT | R |
| 6520011541726 | GOLD ALLOY CAST 2 PWT | R |
| 6520011541728 | GOLD ALLOY CAST 2 PWT | R |
| 6520011541729 | GOLD ALLOY CAST DEN | R |
| 6520011541730 | GOLD ALLOY CAST DEN | R |
| 6520011541733 | GOLD ALLOY CAST 2PWT | R |
| 6520011622077 | BRAZING ALLOY SILVER | R |
| 6520011771993 | GOLD ALLOY CAST FINE | R |
| 6520011790045 | SOLDER GOLD DEN WHITE | R |
| 6520011885347 | PRESOLDER THIN STRIP | R |
| 6520012100148 | POST SOLDER DEN THIN | R |
| 6520012132653 | SOLDER GOLD DEN 2IN | R |
| 6520012132654 | SOLDER GOLD DEN STRIP | R |
| 6520012933360 | SCREW IMPLANT PROSTHE | R |
| 6520012933746 | SCREW IMPLANT PROSTHE | R |
| 6520012944805 | GOLD CYLINDER PROSTHO | R |
| 6520012944806 | GOLD CYLINDER PROSTHO | R |
| 6520013969807 | SILVER ALLOY PWDR MER | R |
| 6640010253176 | LOOP INOCULATING.01ML | R |
| 6640011179692 | LOOP INOCULAT 0.41 MM | R |
| 6810014723872 | ETHANOL ALC ABS200PRF | R |
| 9545004489010 | WIRE NONELECTRICAL D7 | R |
| 9545004489110 | WIRE NONELECTRICAL D7 | R |

E N D  O F  R E P O R T

## 2007 GLOSSARY FOR SB 8-75-S5

| | |
|---|---|
| AAC | acquisition advice code |
| AAR | after action report |
| ACN | asset control number |
| ACR | American College of Radiology |
| ACSIE&FM | Assistant Chief of Staff for Installations, Environment, and Facility Management |
| ADSL | asymmetric digital subscriber line |
| AMDF | Army master data file |
| AMEDD | Army Medical Department |
| AMEDDC&S | Army Medical Department Center and School |
| APPMO | Army PACS Program Management Office |
| AR | Army regulation |
| ASTM | American Society of Testing and Materials |
| AT | acceptance testing |
| ATE | automatic test equipment |
| ATM | asynchronous transfer mode |
| ATO | authority to operate |
| BIT | built-in test |
| BLIC | budget line item code |
| BOI | basis of issue |
| BOM | bill of material |
| BPR | business process review; business process reengineering |
| BSM | Business System Modernization |
| CAGE | commercial and government entity |
| CBRN | chemical, biological, radiological, and nuclear |
| CCR | Central Contractor Registration |
| CD | compact disc |
| CHCS | Composite Healthcare System |
| CIIC | controlled inventory item code |
| CLS | contractor logistics support |
| CONUS | continental United States |
| COTS | commercial-off-the-shelf |
| CPT | current procedural terminology |
| CR | computed radiography |
| CSH | Combat Support Hospital |
| CT | computed tomography |
| CUD | clinical use determination |
| DA | Department of the Army |
| DBPA | Defense blanket purchase agreement |
| DCA | Deputy Chief for Administration |
| DCDD | Directorate of Combat and Doctrine Development |
| DEA | Drug Enforcement Administration |
| DEPMEDS | Deployable Medical Systems |
| DIACAP | DOD Information Assurance Certification and Accreditation Process |

(con't) 2007 GLOSSARY FOR SB 8-75-S5

| | |
|---|---|
| DICOM | Digital Imaging Communication in Medicine |
| DIN-PACS | Digital Imaging Network-Picture Archiving and Communication System |
| DITSCAP | Defense Information Technology Security Certification and Accreditation Process |
| DLIS | Defense Logistics Information System |
| DLSC | Defense Logistics Service Center |
| DMIS | Defense Medical Information System |
| DMIS-SS | Defense Medical Information System-Summary System |
| DMLIIS | Defense Medical Logistics Item Identification System |
| DMLSS | Defense Medical Logistics Support System |
| DMSB | Defense Medical Standardization Board |
| DOD | Department of Defense |
| DSCP | Defense Supply Center Philadelphia |
| DSG | Deputy Surgeon General |
| DSL | digital subscriber line |
| DVD | direct vendor delivery |
| EAS-IV | Expense Assignment System-IV |
| FDA | Food and Drug Administration |
| FEA | Military Radiology Functional Economic Analysis |
| FLIS | Federal Logistics Information System |
| FRA | Forward-repair activities |
| FST | forward surgical team |
| FTE | full-time equivalent |
| FY | fiscal year |
| GME | graduate medical education |
| GSA | General Services Administration |
| HFE | human factors engineering |
| HIS | Hospital Information System |
| IAVA | information assurance vulnerability alerts |
| IETM | interactive electronic technical manual |
| IM/IT | information management/information technology |
| IMD | Information Management Division |
| IMM | integrated materiel manager |
| IPT | integrated process team |
| JBAIDS | Joint Biological Agent Identification System |
| JCAHO | Joint Commission on Accreditation of Healthcare Organization |
| JCN | Joint Control Number |
| JHMET | Joint Healthcare Management Engineering Team |
| LAN | local area network |
| LIN | line item number |

(con't) 2007 GLOSSARY FOR SB 8-75-S5

| | |
|---|---|
| MARC | manpower requirements criteria |
| MCN | management control number |
| MDIS | Medical Diagnostic Imaging Support |
| MECA | medical electronic customer assistance |
| MEDASM | medical assemblages management |
| MEDCASE | Medical Care Support Equipment |
| MEDCEN | Medical Center |
| MEDEVAC | medical evacuations |
| MEDSILS | Medical Services Information Logistics System |
| MEIS | military environmental information source |
| MEPRS | Medical Expense Performance Reporting System |
| MHS | Military Healthcare System |
| MIDI | military item disposal instructions |
| MILCON | military construction |
| MIL-STD | military standard |
| MMO-A | Materiel Acquisition Directorate |
| MMO-AA | Materiel Acquisition Directorate, Ancillary Care Division |
| MMO-AC | Materiel Acquisition Directorate, Acute Care Division |
| MMO-AL | Materiel Acquisition Directorate, Medical Scientific Division |
| MMO-AS | Materiel Acquisition Directorate, Support Division |
| MMO-AT | Materiel Acquisition Directorate, Technology Planning Division |
| MOS | military occupational specialty |
| MPR | MEDCASE Program Requirement |
| MRI | magnetic resonance imaging |
| MSC | Major Subordinate Commands |
| MTF | medical treatment facility |
| MTOE | Modified Table of Organization and Equipment |
| NDC | national drug code |
| NEMA | National Electrical Manufacturers Association |
| NIIN | national item identification number |
| NSN | national stock number |
| O&M | operation and maintenance |
| OCONUS | outside the Continental United States |
| OEM | original equipment manufacturer |
| OPA | other procurement, Army |
| ORF | operational requirement floats |
| OTSG | Office of The Surgeon General |
| PACS | Picture Archiving and Communication System |
| PC | personal computer |
| PDF | portable document format |
| POC | point of contact |
| POM | program objective memorandum |

(con't) 2007 GLOSSARY FOR SB 8-75-S5

| | |
|---|---|
| RCHD | Reserve Component Hospital Decrement |
| R/F | radiographic/fluoroscopic |
| RFI | request for information |
| RFP | request for proposal |
| RIC | routing identifier code |
| RIS | Radiology Information System |
| RMC | Regional Medical Command |
| RVU | relative value unit |
| SA | system administrator |
| SB | supply bulletin |
| SC | supply catalog |
| SCC | supply catalog code |
| SCP | service class provider |
| SCU | service class user |
| SICA | secondary inventory control activity |
| SKO | sets, kits, and outfits |
| SOP | service object pair |
| SOW | statement of work |
| SSP | system support package |
| STCPC | Strategic Technology and Clinical Policies Council |
| SuperCEEP | Super Capital Expense Equipment Program |
| TAMMIS | Theater Army Medical Management Information System |
| TARA | Technology Assessment and Requirements Analysis |
| TCP/IP | transmission control protocol/internet protocol |
| TDA | tables of distribution and allowances |
| TIMPO | Tri-Service Infrastructure Management Program Office |
| TIN | therapeutic index number |
| TMDE | test, measurement, and diagnostic equipment |
| TOE | Table of Organization and Equipment |
| TSG | The Surgeon General |
| UA | unit assemblage |
| UAC | unit assemblage code |
| UCAPERS | Uniform Chart of Accounts Personnel System |
| UDR | universal data repository |
| UPN | universal product number |
| UPS | uninterruptible power supply |
| USACHPPM | U.S. Army Center for Health Promotion and Preventive Medicine |
| USAMEDCOM | U.S. Army Medical Command |
| USAMMA | U.S. Army Medical Materiel Agency |
| USAMRAA | U.S. Army Medical Research Acquisition Activity |
| USAMRMC | U.S. Army Medical Research Materiel Command |
| USAPD | U.S. Army Publishing Directorate |
| WAN | wide area network |
| WebMRE | web MEDCASE requirements and execution |

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By Order of the Secretary of the Army:

SB 8-75-S5

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